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AN
INTRODUCTION
TO THE
PRACTICE
OF
MIDWIFERY.

By THOMAS DENMAN, M.D.

LICENTIATE IN MIDWIFERY OF THE COLLEGE OF PHYSICIANS.

IN TWO VOLUMES.

VOLUME THE SECOND.

THE SECOND EDITION.

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INTRODUCTION

TO THE

PRACTICE OF MIDWIFERY.

CLASS SECOND.—DIFFICULT LABOURS.

CHAPTER X.

SECTION I.

FROM the foregoing history of a natural labour, and from the whole tenour of what has been advanced in the preceding chapters, it appears that parturition is a process of the constitution which, generally, does not require any assistance ; and that when it is natural, it should be suffered to have its own course, without interruption, for the very same reasons, which render all interposition with other natural operations, unnecessary and improper. Whence then arises the necessity or expediency of establishing midwifery as an art for the relief of the human species ? or in what respects has society profited by the establishment ? Certainly not on the presumption that women are by nature destitute of those powers, which

at the time of parturition, are in all other creatures generally equal to the exigencies of their situation ; nor when those powers are fairly exerted, every cause producing its effect, in the order and in the manner which the parts by their construction were framed to perform and undergo ; nor, when there exist no uncommon impediments by which the effects to be produced by the natural causes, are, or may be obstructed. But as the aid of medicine becomes necessary, when from some defective, or irregular exertion of the native powers of the constitution ; or from some adventitious cause of obstruction ; or from some infirmity in the constituent parts of any of the organs of the body, the functions of any part are suppressed, impeded, or in some way rendered irregular, to the detriment of that part, or of the constitution : from the same causes, and in like manner, the assistance of the art of midwifery may be required for the relief of irregularities or difficulties in the act of parturition.

In all creatures in which there is a difference of structure, there must be a difference in the conduct or manner of every function of the constitution, which is at all connected with, or dependent upon such variety in structure ;

ture ; and a difference in the process of any function, especially if this should be rendered more complex, may become the predisposing cause of such deviation from the natural course of that function, as may require the assistance of art : though the very same function, proceeding or being performed in a natural way, might be void of danger, and require no assistance whatever. The knowledge of the peculiarities of the human species, or of the specific circumstances in which the constitutions of women differ from those of all other female creatures, may therefore be considered as affording the only just and true basis on which both the theory and practice of midwifery ought to be founded. Before we proceed, then, to an enquiry into the particular cases which may demand the assistance of art, or determine upon the manner in which that art can be exercised with the greatest propriety and advantage, a short review of those peculiarities will be necessary and useful, that we may be cautioned to avoid the abuse of the art, or the exercise of it, except in those cases in which that assistance which art can afford, is absolutely required.

The first and most obvious circumstance in which women differ from all other female

creatures, is the erect position of the body; of the consequence of which, with regard to the *pelvis*, and some diseases to which women are particularly liable, notice has been already taken*. In the original construction of the *pelvis* in quadrupeds, with a view to parturition, there seems to be a necessity for regarding its capaciousness alone; because if even more than sufficient space were provided for the passage of their young, no attitude into which they put themselves, or into which they can be compelled by any accident, during utero-gestation, would subject them to danger on this account. But from the erect position of the human body, if the cavity of the *pelvis* had borne the same relative proportion to the size of the *fœtus* as in quadrupeds, women would have been liable to many and great inconveniencies. For the weight of the *ovum* and enlarged *uterus* must, in advanced pregnancy, have been occasionally sustained by the soft parts, which becoming thinner, and less equal to that office, according to the advancement, premature labour would often have been occasioned. For this, and perhaps several other less obvious, though equally impor-

* See Vol. I. Chap. i. Sect. v. and Chap. iv. Sect. i.

tant reasons, which it is not necessary to enumerate, there undoubtedly is in human beings, a greater difference between the dimensions of the cavity of the *pelvis*, and the head of the *fœtus* at the time of birth, than in animals; and this difference must eventually become the cause of more painful and difficult parturition.

As there is no effect throughout nature without some adequate cause, as well as some wise end, perhaps the most satisfactory proof of the existence of this disproportion, may be drawn from the construction of the head of the human *fœtus*, which being incompletely ossified at the time of birth, is capable of having its form changed, and its size diminished, without any injury, from the compression. These effects are produced in some degree in almost all labours, but very remarkably in those which are completed with difficulty; for in such, the sutures not only accede, but the edges of the bones will ride over each other in a very extraordinary manner. From this original and comparative relation between the cavity of the *pelvis*, and the head of the *fœtus*, women are naturally more liable to difficulties in parturition than animals; which

difficulties may be esteemed as an allay for the advantages obtained by the erect position; or because their offspring were so framed as to be capable of greater excellencies than animals; which excellencies may depend upon this construction of the head. Without this incomplete ossification, great numbers of children must have been inevitably destroyed at the time of birth, or the parents must have died undelivered. Nor is this provision only sufficient to answer the end of mitigating those evils to which women are by their structure necessarily liable; but it is generally equal to the relief of those which are occasioned by morbid alterations in the size of the cavity of the *pelvis*.

2. The intercourse between the parent and *fœtus*, while it abides in the *uterus*, though generally alike in all viviparous animals, has some variation in each class. The *ovum* is constructed for a temporary use, but in a most beautiful and perfect manner for the purposes for which it was ordained. The variations may exist either in the *uterus* or *ovum*.

In the *uterus* of the different classes of animals, the most obvious variety is in the form. Animals might, perhaps, be nearly as well arranged,

arranged, and the class to which they belong as well determined by the form of the *uterus*, as by any external or other internal mark. Such as are the form and structure of the *uterus*, such will be the properties; and of course in every animal in which there is a difference in form or structure, there will be some corresponding difference in the circumstances of parturition; so that if an enquiry was attentively made, it is probable we should not find an exact likeness in the parturition of any animals which vary either in *genus* or *species*.

The *uterus* in all animals, may be considered as the bed or soil in which the *fœtus* is nourished, preserved and accommodated, till it arrives at a state of perfection, and the part by which it is ultimately expelled. For the completion of these ends, there must be a perfect coincidence between the nature of the *fœtus* to be thus nourished, preserved, and accommodated, and the form and properties of the *uterus*, by which those offices are to be discharged. The varieties in the form of the *uteri* in different animals are progressive, from those of the lowest tribe, which are horned, to the human, which when un-impregnated, is pyramidal,

becoming more oviform according to the degree of its distention. On the form of the *uterus* not only the accommodation of the *fœtus* may depend, but the term of utero-gestation also; on the power which every individual *uterus* has of bearing distention only for a specific time. Yet if this were allowed, it would still remain to be proved why an *uterus* of one form, became capable of bearing distention for a longer time than that of another.

Complicated with, or dependent on form, is the substance or thickness of the *uterus*; and on this again the power which the *uterus* is capable of exerting at the time of parturition. The *uterus* in women is of greater thickness, and of a firmer texture in the unimpregnated state, than in animals; for in these it is said to become somewhat thinner, in proportion to its distention; whereas in women it retains its thickness, if it does not become rather thicker during pregnancy. It appears that by this thickness is gained the medium of that power which is exerted by the human *uterus* in the act of parturition, and without which women could not in many cases have been delivered. But if there had
been

been occasion in animals, for the exertion of an equal degree of power, they could not have been delivered; as there is not in them a medium by which such power could have been exerted, and the form of the *uterus* would also have been less favourable for its operation had it existed.

This thickness of the *uterus*, notwithstanding its distention, is chiefly preserved by the gradual enlargement of the arteries, veins, and lymphatics, and their enlargement is most conspicuous about that part to which the *placenta* adheres. The quantity of blood circulating in the human *uterus* and the adjacent parts, during pregnancy, is very great; and it probably undergoes in the *uterus* itself, some preparatory change, before it is conveyed to the *placenta*; so that it may be presumed, that the *uterus* performs the office of a gland altering and preparing the blood, before it is conveyed to the *placenta*, for a more perfect secretion of whatever is to be separated from it, for the use of the *fœtus*; as well as that of the containing part of the *ovum*. On the quantity of blood circulating in the *uterus* may also depend its action at the time of labour; for if the *placenta* be loosened before the child is born, and the blood has a free discharge, there
is

is seldom any efficacious action, though the *uterus* may be, in all other respects, in a state of perfect health.

In our present inquiry, the principal part of the *ovum* which deserves attention, is the *placenta*, and of this there is an endless variety in the different kinds of animals, according to the nature and properties of each parent and the offspring. In the *belluæ*, the office of the *placenta* is performed by the whole membrane of the *ovum* being thickened, and becoming proportionably vascular; in the *pecora* the *placenta* is divided into many lobules, composed of long and vascular fibres, called *cotyledons* or cups, affixed to as many temporary eminences of the internal surface of the *uterus*; in the *feræ* it surrounds the *uterus* like an internal belt; and so on, with great variety, in the different classes of animals. But in the human species, the *placenta*, as the word implies, is in one flattened mass, of a circular form, becoming gradually thinner towards the edge, and it adheres to the *uterus* with a broad surface. When this is separated, the orifices of many of the large vessels of the *uterus* are opened, and a considerable quantity of blood is immediately discharged, far beyond what could possibly be lost in any animal, though of a much

a much larger size; and if the *uterus* was to continue distended, the orifices remaining open, there would be a dangerous or a fatal hemorrhage. For not only the blood circulating in the *uterus* would be immediately poured out of its vessels, but all that which is contained in the body might be drained, and the patient speedily perish, if she was not relieved by art; and yet no animal ever was or could be destroyed, or brought into danger by this circumstance. From the same cause also, the uterine discharges continue a longer time, after delivery, in women than in animals; the irregularities and interruption of which may become the causes of disease, and are proofs that, independent of fashion or custom, there is a necessity that women should, for their own safety, be separated from society for a certain time after delivery. On account also of the form of the *uterus*, and the peculiarities of its action, of the bulk of the *placenta*, and the manner of its connexion, it is more likely to be retained in women than in animals; and its retention may be followed by worse consequences.

3. In the consideration of this subject, the passions of the mind are of too evident importance

tance to escape attention. On a variety of occasions, these, in human beings, to a certain degree, in a natural state, and much more when heightened by all the refinements and perversions of society, are found to be capable of producing the most extraordinary effects ; by suppressing or suspending for a certain time the action of any, or of all the powers of the constitution ; by occasioning them to act with irregularity, and at improper times ; and in some cases also by exciting them to act with too great energy and force. But animals suffer neither from the recollections of the past, or dread of the future ; and acting according to their nature, the good or evil of the present moment, probably to them appears to be the whole of their existence. In the passions we may then discover sources of danger, and disturbance in the parturition of women, from which animals are wholly exempt ; and the observation is so general, that care is universally taken to prevent the communication of any intelligence to women in, or about to be in labour, which can either distress, or much agitate them. To this principle or cause, may also be referred, the many nervous affections to which women
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are subject in the state of childbed, and for some time after they are delivered, when the animal powers are reduced, and the sensations quickened. But it must be allowed, that the greater degrees of these evils, are not to be attributed to physical infirmities, but to moral errors.

A consideration of their unimpaired constitutions and less exquisite feelings, will likewise discover to us the reason why the lower orders of women have more easy and favourable births than those who live in affluence; the frame of whose bodies, and the sensibility of whose minds are altered, and often depraved, by the indulgence of parents, when they are infants, and by their own luxury, when they are adult. The constitutions of those who are hardy, are better able to bear the common accidents of childbearing, and they suffer less because they have less feeling and apprehension. When the *Egyptian* midwives were charged before *Pharaoh* with disobedience to his orders, because they preserved the lives of the *Hebrew* children, they pleaded in their excuse, that the *Hebrew* women were not like the *Egyptian*, “ they were lively, and were delivered before they (the midwives) could come to them.” The *Hebrew* women
were

were slaves, accustomed to labour and hard living, yet they had more children and easier labours than the *Egyptian*, who, we may presume, suffered all the evils arising from indolence and luxury. The same observation will also explain the reason of many of those evils which women in the higher ranks of life suffer; particularly why fewer women die in child-bed in the country than in cities, where even those of the lower class are often compelled to live in unwholesome situations, and too often plunge into gross indulgences, and therefore suffer the same or a worse fate, than the delicately luxurious.

4. We are lastly to consider, that women are by constitution and by habits of education and living, subject to diseases to which animals are not liable; which diseases may create new causes of difficult parturition, may increase natural evils, or may weaken those powers by the operation of which, difficulties should be overcome. All these diseases it is unnecessary, and perhaps impossible to enumerate; but that, which by affecting the bones in general, and those of the *pelvis* in particular, has the greatest influence on labours, is deserving of especial notice.

By the *Rachitis* is not only understood the disease of children properly so called, but the *osteo sarcosis*, or *mollities ossium* also, this being the only difference between them ; that in the former, the bones, in the infantile state, are prevented from acquiring such a degree of firmness, as will enable them to sustain the weight of the incumbent body, without yielding and becoming distorted ; which distortion may remain to adult age. But, in the latter, the bones having been properly formed and ossified, become soft again, in consequence of the absorption of the ossific matter, by which the most extreme degrees and frightful kinds of deformity have been sometimes occasioned, the progress of the disease being sometimes indicated by the increasing difficulties of successive labours*. From distortion produced by either of these causes, the cavity of the *pelvis*, which in a natural state, should measure upwards of four inches, in its narrowest limits, may be reduced to two, or even to less than one inch ; by which the reciprocal proportion between it and the head of the *fœtus*, is perverted or destroyed, and it is absolutely impossible for the latter to pass through the former. This

* See Vol. I. Chap. i. Sect. x.

softness and consequent distortion of the bones, being peculiar to, or infinitely more frequent in the human species, occasions difficulties at the time of parturition, from which animals are almost universally free. Even if animals were liable to it, from their position, and the diminished weight which the *pelvis* supports in quadrupeds, it could not produce the same kind or degree of effect. From the frequency of this disease in cold and unwholesome climates, or in crowded cities, or wherever the employments and manners of the human race, weaken the constitutions of the inhabitants; and from its rarity in warm and healthy situations, with rustic employments and simple manners, we may conclude, though we retain and act upon the same principles, that the events resulting from the practice of midwifery must be different in different places, and that the authority of the best writers must in some measure be local.

On account of the originally relative smallness of the cavity of the *pelvis* to the head of the child, of the structure of the *uterus* and *placenta*, of the passions, and of the diseases to which mankind are by nature, or by the customs of society, rendered peculiarly liable, the
causes

causes of many difficulties and dangers which attend parturition, will be evident; and of course, the necessity of establishing midwifery, as an art, for the relief of women, will be evinced.

But to render these observations, with others, diffused through this work, of greater use, I shall endeavour to reduce them into propositions in the following order :

1st. All viviparous animals bring forth their young with pain.

2d. The degree of pain which they suffer, will depend upon the degree of their sensibility, natural or acquired, and upon the difficulty with which they bring forth their young.

3d. The difficulty with which they, in general, bring forth their young, depends upon their construction.

4th. By their construction, they are also endued with powers capable of overcoming all the difficulties to which such construction generally renders them liable.

5th. The process of parturition in animals is therefore to be esteemed a natural process, requiring no other assistance, than the exertion of those powers which depend upon their construction.

6th. The construction of the females of the human species is different from that of the females of any order of animals.

7th. The construction of the females of the human species is such, as to render them unavoidably subject, in general, to greater pain and difficulty in parturition, than the females of any order of animals.

8th. But by the construction of the females of the human species, and by the original formation of the head of the human *fœtus*, provision is made for overcoming all the difficulties to which the peculiarities of their construction may render them generally liable.

9th. With regard to the act of parturition, when natural, women are therefore to be esteemed on a similar footing with animals.

10th. But as women are by their construction, and by the customs of society, subject to diseases and accidents; which increase the natural difficulties and danger attending their parturition, from which the females of every order of animals are free,

11th. It will follow, that the occasions which require assistance at the time of parturition, must, of necessity, occur more frequently

quently in women than in the females of any order of animals.

From these premises, the expediency and necessity of establishing midwifery as an art for the relief of the human species will appear, and the art be directed to its proper objects.

SECTION II.

MANY general circumstances and appearances have been mentioned, and considered as presumptive signs of difficult labours, and it will not be improper to enumerate them; though I apprehend, that much stress cannot be laid upon them with a view to practice. If they were certain and invariable, it would be incumbent on us to understand the degree and extent of their influence, and to apply ourselves to the discovery of some means, by which we might prevent or remedy the evils which were foreseen.

1st. The kind of labour which any particular woman will probably have, has been supposed to be indicated in some degree, by

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her complexion. Women with very fair or very dark complexions, have been supposed equally subject to difficulties or inconveniences in parturition; whilst those of the intermediate shades were considered as having advantages in their favour. Now, as far as any particular complexion can indicate a general state of health, this observation is reasonable and true, with respect to labour; those who have the best health, usually passing through that process in the best and safest manner. But as those who are of complexions in either extreme, may have perfect health, any inference drawn from this principle, must be liable to many exceptions.

2d. By the general size of the body, it has been conjectured that we might foresee whether an ensuing labour would be easy or difficult. This observation will stand upon the same ground with the foregoing; that is, it may hold good, as far as any particular size may be found best suited for performing all the functions of the body, and for the general purposes of life. Those who are very tall, are not often very active, or capable of bearing much fatigue; and those who are very short, may have been cramped or become deformed
in

in consequence of ill health in the early part of their lives: those, on the contrary, who are of a middle size, or rather below it, being presumed to be more generally healthy, and best adapted to the common occasions of life, may be expected to have the best labours, as they have sufficient power, and a readier disposition to act.

3d. The habits of life, and the dispositions of patients, have been supposed to have some influence in forwarding or retarding labour. Those women who are indolent in their tempers and habits, perform all the functions of the constitution in a slow and indolent manner, and of course may be expected to have tedious labours. But those who are of lively dispositions and active habits, being in the constant exercise of their powers, have not only these powers strengthened and improved, but greater energy also; and the activity of the parts concerned in parturition, will partake of that of the body in general.

4th. The regularity, together with the ease or difficulty of a labour, may, in some measure, depend upon the strength or weakness of the faculties of the mind. But this must be a very general observation, and can only

hold good in that extensive way in which it is admitted in other occurrences of life, in which weakness of judgment may pervert regularity into disorder, fancy evils that do not exist, or add to the weight of those which are unavoidable.

5th. Labours are generally affected by the climate in which women are born and reside. In hot climates, all natural labours are said to be more easy than in those that are cold; probably, because the disposition to relax and dilate, is sooner assumed, and more perfectly accomplished. But in cold climates, from the native or acquired rigidity and firmness of all the parts of the body, there will be occasion for greater exertion, though there may be greater power; yet if the labours are slower, perhaps the feelings are less, and they may terminate with equal safety, and probably on the whole, without greater suffering. In the same climate there will generally be some variations in labours at different seasons; and I believe it is true, that in this country, women have easier labours in summer than in winter.

Such observations might be extended to a greater length, and discussed with more nicety; but

but they can hardly escape the notice of an attentive man, and he that is prudent will not esteem them of too much value.

SECTION III.

WITHOUT some accuracy of distinction, it will not be possible to acquire or communicate such a knowledge of *Difficult Labours*, as will enable us to conduct women through them safely and properly. It is therefore necessary, in the first place, that we should define what is meant by the term; and we will say, that every labour, in which the head of the child presents, which is protracted beyond twenty-four hours, shall be called *Difficult* *.

This

* Fit partus difficilis et laboriosus, quod nec modo neque ordine debito res peragatur, aut pravis aliquibus symptomatis impediatur. HARV. *Exercit. de Partu*.

Dicitur autem partus ille difficilis, qui cum foetus vel matris periculo accidit; vel quia cum gravissimis fit symptomati-

This definition, which is chiefly taken from time, is liable to some objections, as there may be more pain endured, and greater difficulties surmounted by one woman in six hours, than by another in twenty-four; but on the whole, it will be found to apply to practice in an advantageous and unexceptionable manner. It will, in particular, afford a remedy for impatience, and guard the practitioner, in some measure, from premature attempts to give assistance, without incurring the danger of those evils which might be apprehended from too long delay.

Of those labours which come under the denomination of *Difficult*, there is an almost endless variety in their causes or degrees. Some are occasioned by one cause alone, but more frequently by a combination of various causes, though one may be more obvious and

bus, vel quia tardius procedit, ita ut longo tempore prematur mulier—*Roderic. a Castro Lusitan.*

Partus difficilis appellatur, qui debitas atque ordinarias naturæ leges non servat, sed longius tempus infumit, et dolores subito vehementiores, aliaque symptomata graviora comitantia habet—*Riverii Prax. Medic. De Partu difficili.*

Fœtûs maturi enixus laboriosissimus. *Linnæi Nosologia.*

important

important than the rest*. For the uses and purposes of practice, it is not sufficient to say, that all labours are rendered difficult, either from the greatness of the obstruction, or by the insufficiency or debility of the power by which the obstruction should be overcome; or, that some depend upon the mother, and others upon the child. Such distinctions or references are too general. The particular cause of every individual difficult labour, should be pointed out, as well as the conduct which each specific cause may require. It was before observed, that there are advantages to be gained by experience, of which no doctrine or words can convey an adequate idea, and those who are in possession of experience, seldom bend to the rules or admonitions of others; nor indeed is this to be expected. But it is of the greatest consequence to those who have not yet at-

* As many causes concur in the production of compound effects, we are liable to mistake the predominant cause, unless we can measure the quantity of the effects to be produced, compare them with and distinguish them from each other, and find out the adequate cause of each single effect, and what must be the result of their joint action.

See Dr. DESAGULIER's *Preface*.

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tained experience, that they should acquire the custom of registering and arranging the particular knowledge they may have an opportunity of gaining, in regular and systematic order, or they will lose the benefit of it ; as it will either be forgotten, or recollected with difficulty, when they want to apply an observation made in one case to the exigencies of another. To lessen those defects, and to point out a better method of preserving the advantages of experience, as well as to record, in the clearest manner, what my own experience has taught me, we will divide all *Difficult Labours* into four Orders or Kinds, and then enumerate the principal causes of each Order. As the knowledge of causes, and the management or removal of effects or difficulties, should accompany or immediately follow each other, the methods to be used for the relief of these, will at the same time be pointed out.

In the *First* Order will be included all those labours which are rendered difficult from the inert or irregular action of the *uterus* :

In the *Second* those which are occasioned by the rigidity of the parts to be dilated :

In the *Third*, those which are occasioned
by

by disproportion between the dimensions of the cavity of the *pelvis* of the mother and the head of the child :

In the *Fourth*, those which are rendered difficult by diseases of the soft parts.

Under one or other of these Orders may be arranged every labour which can properly be called *Difficult*.

This kind of labour has by many writers been subdivided into lingering and difficult ; but as by the former appellation, a less degree of difficulty is only meant both with regard to cause and effect, the subdivision seems unnecessary.

SECTION IV.

ON THE FIRST ORDER,

OR

Those Labours which are rendered difficult from the inert or irregular action of the Uterus.

THE action of the *uterus*, by which every child must be expelled, is accompanied with pain proportionate to the force and to the resistance made. But as this action may become imperfect, irregular, or insufficient for the purpose of expelling the child, it is needful that we should be acquainted with the causes of such imperfection, irregularity, or insufficiency. Of these causes there is,

1. *The too great distention of the uterus.*

It was formerly believed, that the *uterus* was distended mechanically, by the increase of the *ovum* contained in it. With this opinion, it might be concluded, that either from the size of the child, or the quantity of water, the *uterus* might be brought into a state
similar

similar to that which takes place in the bladder; which, when distended beyond a certain degree, loses all power of action. But later observations have proved, that the impregnated *uterus* is never completely distended, nor in any degree by its contents, but by the operation of a principle, which it acquires in consequence of pregnancy; which principle ceases to act at the conclusion of the term of utero-gestation, and is immediately succeeded by another directly contrary, that of expulsion*.

But though the *uterus*, when in an healthy state, cannot be distended beyond its power of action, occasion has been taken to observe, from the slowness and smallness of the effect of the first pains of labour, that the power exerted by the *uterus*, is generally suited to the state of the parts, and the parts to the *uterus*, with a wonderful co-incidence. Yet as every principle in nature may alter or fail, so that of the distention of the *uterus* may prevail to such a degree, or may continue so long a time, that its possible expulsoy force shall be weakened, and its energy lessened; and

* See Vol. I. Chap. v. Sect. xi.

this seems to be proved, not only by the slackness and feebleness of the pains in the beginning of all labours, especially in those cases in which there are two or more children, but by the increase of that action, when part of its contents are evacuated. It is however to be recollected, that the *uterus* cannot be distended beyond its power of action, though when greatly distended, it is only capable of slow and feeble action, which is nevertheless preparatory to that which is stronger. But this slow or feeble action, from distention, is not an object of art; and it is perhaps beyond the influence of any earthly power to give to the *uterus* its native or genuine disposition to act, to add to its power, or in any material degree to increase its energy, though many applications and medicines have been recommended and tried for this purpose. Human art may put or preserve the constitution in a state fitted for such action, or it may remove any impediments to its effect; but the principle is wholly independent of the will of the patient, or the skill of the practitioner. When therefore the pains of labour are in the beginning feeble and slow, as no harm can arise from this cause,

either

either to the mother or child, except that the former is under the necessity of bearing them for a longer time, though on the whole, perhaps, not in an increased degree ; and as the methods advised and practised for the purpose of accelerating labours rendered tedious from this cause, are either immediately injurious, or may lay the foundation of future mischief to one or both, it becomes our duty under such circumstances to leave the business entirely to its own course without any interposition. Even when a labour has made considerable progress, and there was reason to expect that it would have been concluded in a short time, there may be a suspension of the action of the *uterus* for many hours, without any mischief or hazard, as experience often shews, though the cause of such suspension may not be obvious to, or explicable by us *.

Immediately on the accession of labour, it

* With the ancients it was a custom in these cases to introduce a stimulating pessary into the *vagina*, and lately with a physician in *France* to apply a mixture of the berries of the Bay tree and oil, to the navel, in the time of labour, by which he was supposed to do some good, and certainly gained some credit.

has been the custom to confine women to their beds, or to some particular position, on the presumption that it would be thereby rendered more easy than in any other. By such conduct, expectations of a speedy delivery are often raised; and when these are baulked, the mind of the patient is disturbed, and the process then becomes irregular. But it will always be found more comfortable and useful to leave the patient to her own choice in these matters, and her inclination will be a better guide than any other. Time is the safest and generally the only remedy for lingering and tedious labours occasioned by the too great distention of the *uterus*, and the patient will often find relief, either by walking or standing, or choosing that position which she herself prefers, because she will instinctively seek that which is proper. However, in many situations of this kind, the repeated exhibition of emollient clysters will be of service; and when the labour is far advanced, in some cases in which the action of the *uterus* is very feeble and slow in its returns, as if it were unwilling to come on, a clyster rendered stimulating by the addition of one ounce of culinary or
cathartic

cathartic salt, will often rouse the dormant powers into action, and the labour will be much sooner completed *.

2. *Partial action of the uterus.*

It was observed, that previous to labour, the *uterus* commonly subsided lower into the *abdomen*, and that the more perfect this subsidence was, the more kindly would the labour probably be; because the *uterus* would act with more advantage. But in some cases, the *fundus* of the *uterus* does not subside before or even in the time of labour, the patient herself being sensible of, and complaining that the child is very high in the stomach. Sometimes the patient will also complain of vehement and cramp-like pains in various parts of the *abdomen* producing no effect, and which are afterwards proved to have been occasioned by the irregular contraction of the *uterus*. This irregular and partial action, which is properly called spasmodic, is capable of throwing the *uterus* into various forms; sometimes

* Clysteres injiciantur, quorum irritatione expultrix uteri facultas excitatur, et depleta intestina, ampliorem locum utero relinquunt.

Riverii Prax. Medic. De Partu Difficili.

the longitudinal, and at others the hour-glass, with all their varieties and degrees. Every change in the form of the cavity of the *uterus*, from the genuine will be productive of inconvenience, according to the peculiarity and degree of alteration ; and it is to be wished, that we could discover the means of altering the form of the *uterus* when thus irregular, of suppressing its action when too vehement or untimely, and of strengthening it when too feeble, according to the necessities of each case that might occur. But as these things are beyond our power, and all that we can do must depend, not on commanding what we choose, but by making the best of such circumstances as do really occur, it is necessary to consider, whether by any previous management it is in our power to prevent this irregularity of action, or remedy its effects when it is in such a degree, as to be very painful or troublesome before, or productive of inconvenience at the time of labour. When there is any unusual kind of pain in the region of the *uterus*, greater than, or different from, that which may be considered as one of the common effects of pregnancy, there is generally an increase of that feverish disposition, which
in

in a certain degree is natural to all women with child; and it will then be necessary to take away small quantities of blood, to give cooling medicines; to be very attentive that the regular course of the bowels is procured or preserved, and I think I have seen much good done by gently rubbing the whole *abdomen* with warm oil. This irregular, as well as the insufficient action of the *uterus*, most frequently happens to those who are naturally too irritable, or who lead inactive lives; and to such women should be pointed out the necessity of acquiring a composure of mind, and of using exercise in the open air as far as their unwieldiness will with propriety allow; and even in the time of labour, if rendered tedious from this cause, in which the pains are very sharp yet ineffectual, it is of use to bear them, when in an erect position, and to walk about in the intervals. The chief part of what can be further done, is to impress upon their mind the necessity of exercising that patience which we on our parts ought never to want. In some cases of this kind, when the patient has suffered much and for a long time, after bleeding and the administration of a clyster, I have directed twenty drops of *Tinct. Opiica* to

be given, with the intention of suppressing the present pain which was irregular, and with the hope that when the pain returned, it would be with regularity and efficacy. But in general I have great objections to opiates on slight occasions for women in labour; being persuaded, that by disturbing the order of labour, they frequently produce very untoward symptoms, and make that which was in itself natural, become difficult or dangerous to the mother or child, as evidently as any other kind of unseasonable interposition.

3. *Rigidity of the membranes.*

This has been mentioned by the generality of writers, as a cause of difficult labours; and I have observed, when a labour proceeds slowly, the membranes being unbroken, their rigidity is usually assigned as the cause of the difficulty. This subject has already been considered in the history of natural labours; but we cannot too often inculcate, as the observation is of the greatest importance, that neither the mother nor child are ever in any danger on account of the labour before the membranes are broken; and that there is infinitely more caution required to avoid breaking them
too

too early, than there is difficulty in breaking them when it is necessary. The true cause also why the membranes do not break at the usual or proper time, is not in truth from the rigidity of the membranes, so commonly as from the weak action of the *uterus*; because the membranes are scarcely ever so rigid as to withstand the force of very strong pains, unless the whole *ovum* were expelled at the same time; a circumstance not unfrequent in premature labours. More than one case has occurred in my own practice, to which particular attention has been paid, for the purpose of registering the observation, in which the labour has commenced properly, and proceeded with much activity, till the *os uteri* was fully dilated, and then ceased altogether for several days: at the end of that time the membranes breaking, the action of the *uterus* has returned, and the labour been finished speedily, with perfect safety to the mother and child*.

* When the head of the child is born with the membranes unbroken, it is said to be born with a cawl. To this cawl imaginary virtues have been attributed, and a fancied value has been set upon it. It was esteemed the perquisite of the midwife, and perhaps the whole was the contrivance of some intelligent man, to prevent her from interfering with any labour, which was going on in a natural way.

The circumstances of labours are however sometimes, though very seldom, such as make it not only justifiable but eligible or perhaps necessary to break the membranes artificially. But before this is attempted, we ought first to be assured of the state of the *os uteri*, because this will offer be spread over the head of the child, so thinly and uniformly, before it is in any degree dilated, as to resemble the membranes. But when the *os uteri* is wholly dilated, and we have determined upon the propriety of breaking the membranes, no instrument is required for that purpose. If they are confined with the end of the fore-finger upon the head of the child, during the time of a pain, they generally give way; or if this is insufficient, they may be rubbed with the end of the finger, on one particular spot, till they are worn through; or they may be scratched with the nail of the finger, cut and turned up for that purpose. I am persuaded, that no person, who is capable of judging when the membranes ought to be broken, will ever meet with any difficulty in breaking them.

4. *Imperfect discharge or dribbling of the Waters.*

This circumstance is a cause, or at least a frequent

frequent attendant on Difficult Labours, especially when the membranes have been broken designedly, or spontaneously before the *os uteri* was dilated, though far more frequently in the former case. For if the membranes do not break or are not broken, before the complete dilatation of the *os uteri*, the whole quantity of the water is generally discharged at once, and the head of the child is speedily advanced by the succeeding pains. Sometimes indeed the head of the child is so placed as to lock up a great portion of the water, which cannot escape till the head is expelled. Should the water be imperfectly discharged, a further small portion of it is evacuated whenever there is a pain, and the pain is not immediately efficacious, or entirely ceases after the discharge. In this situation there are only two methods to be pursued; we must either wait till all the water be drained away by these repeated small discharges, or we must contrive some method by which their evacuation may be hastened. If there be no particular reason against our waiting, it is better not to interfere, but to leave the business entirely to nature, explaining the state of the case to the patient or her friends, taking care to pre-

vent their apprehension of danger from the delay of the labour, and not by our solicitude to raise their expectations or their fears. But when the water dribbles away in the advanced state of a labour, or there is reason for our wishing a speedy conclusion of it, either on account of the mother or child, it will be expedient to forward the discharge of the water, by raising the head of the child a little higher into the *pelvis*, by the introduction of the fingers and thumb of the right hand, which may be done without prejudice either to the mother or child, during the continuance of the pains; or, by pressing the head towards the hollow of the *sacrum*, by which means, more room will be made for the water to escape. However, the dribbling of the water is not a circumstance of much importance, when it is not combined with other causes of difficulty; and it may be again mentioned that it is generally occasioned by the artificial or premature rupture of the membranes.

5. *Shortness of the funis umbilicalis.*

The *funis umbilicalis* seems to admit of a greater variety than any other part of the *ovum* when at its full growth, being in one sub-
ject

ject perhaps three or four times as long as it is found in another. It may be naturally very short, or it may be rendered so accidentally, by its circumvolution round the neck or body of the child. Whichsoever of these is the case, the inconvenience produced at the time of labour is the same; that is, the labour may be retarded; or perhaps the *placenta* may be loosened prematurely; or the child may, in a tedious labour, be injured or perhaps destroyed by the mere stretching of it, as this must necessarily lessen the diameter of the vessels. But the two latter consequences very seldom follow.

The shortness of the *funis* is always to be suspected when the head of the child is retracted upon the declension of every pain; and it may sometimes be discovered that it is more than once twisted round the neck of the child, long before it is born.

Various methods have been formerly recommended for preventing this retraction of the head, some of which are insufficient and others unsafe*; and the inconvenience is usually overcome, by giving the patient more

* Nocet obstetricis digitus ano immixtus, item nimia festinatio.—RUYSCH.

time. But if the child should not be born when we have waited as long as we believe to be proper or consistent with its safety, or that of the parent, it will be requisite to change her position, and instead of suffering her to remain in a recumbent one, to take her out of bed and raise her upright, to permit her to bear her pains in that situation; or, according to the ancient custom of this country, to let her kneel before, and lean forwards upon the edge of the bed; or, as is now practised in many places, to set her upon the lap of one of her assistants. By any of these methods the retraction of the head of the child is not only prevented by its own gravitation, but the weight of the child will be added to the power of the pain; and it will likewise be expelled upon an inclined instead of a level plane. In the course of practice, I can with infinite satisfaction recollect, a great number of cases in which, by adverting to the benefits to be gained by an erect position, labours have not only been accelerated, but the use of instruments, which were before thought necessary, has been avoided.

When the head of the child is expelled, if the *funis* be twisted round its neck, there is
sometimes

sometimes a little delay and difficulty before the body can be protruded or extracted. We are, in the first place, taught that it is proper to bring this over the head forwards, lest the *placenta* should be separated, or the body of the child be hindered from advancing till it suffers detriment, or is brought into absolute danger. But it is in some cases drawn so tight round the neck, that this cannot be done, without increasing the hazard of the mischief we wish to avoid. We have then been advised to slide the *funis* over the shoulders, but this may be equally impracticable with the former method. If either of these intentions can be accomplished without violence, they are to be attempted, otherwise they must be omitted. The child will nevertheless be expelled, if we wait for the return of a few pains, which we may very safely do, and without any other inconvenience than an increased distention of the *perinæum*; the body making a shorter bend or doubling, on account of the confinement of the neck by the twisting of the *funis*.

Instances have occurred, in which, though the head of the child was expelled, the body has remained, and could not even be extracted for a long time, perhaps for several hours.

Two

Two things are then to be considered, first, whether the child be living; secondly, whether it be hindered merely by the shortness of the *funis*. If the child should shew any signs of life, and breathe, though imperfectly, we have no occasion to be in a hurry, it being only requisite that we should keep its mouth open to allow of the free access of the air, till it is expelled, or can be more readily extracted; for the internal organs will accommodate themselves to that state, and the child will possess a species of life half uterine, and half breathing. But when it has remained in that situation as long as we think consistent with its safety, and it cannot without great violence be extracted; should it then be hindered by the shortness of the *funis* only, we have been taught* that it is adviseable to divide the *funis*, before the body is expelled. Previous to our doing this, it will however be expedient to tie the *funis* with two ligatures, and then to divide it between them, otherwise the child will be instantly destroyed by the sudden gush of blood; as happened in an unfortunate case under my own care, though it was living when I divided the *funis*.

* See Chapman—p. 63 and 85.

When

When the child is dead, and the total exclusion of it is prevented by the tumefaction of the body, or by any other cause, by passing a napkin or handkerchief round its neck, and taking both the ends in our hands, we shall be able conveniently to exert much force, and if we pull steadily, and in a proper direction, we shall usually succeed in extracting it. But if we are yet foiled in our attempts, by turning the head on one side, we must endeavour to bring down one or both arms, which being included in the handkerchief, will allow us to pull with yet more force, and facilitate the passage of the body. The greatest difficulty of this kind I ever saw, was in consequence of the inflation of the whole outline of the body from its putrefaction, and there was occasion for all the force I could exert; but in other cases I have succeeded better, by availing myself of the changes produced, by waiting and giving more time, rather than by the exertion of much force.

6. *Weakness of the constitution.*

The health of women at the time of parturition is often impaired, either by some general indisposition which may have continued through

through pregnancy, though not altogether dependent upon it; or, by some disease with which they are attacked, when they are perhaps in daily expectation of falling into labour. The more perfect their health is, the better fitted they are for the circumstance of child-bearing, as the process will not only go on with more regularity, but they will also recover more favourably, as is well known to those who are engaged in the practice of midwifery. Because though it be allowed that the state of child-bearing is not a state of disease, yet experience has shewn, that all diseases with which women are at that time affected, are not only apt to fall upon those parts which are left in a more irritable state, in consequence of the changes they have so lately undergone, but the progress of diseases is also then more violent, and the event far more dangerous *.

* Hence at the time of any epidemic disease, women more frequently fall in child-bed, though they are managed with equal skill and care. In the history of the different plagues in London, there are sometimes two or three hundred women who are put down as dying in child-birth in one month. *Procopius* has also told us in his account of the plague at Constantinople—*Tres saltem puerperæ convaluere.*

But

But the case of which we are now speaking, is when the general health of women is reduced below its proper standard, by some previous or accompanying disease, not absolutely connected with a state of pregnancy, of which a consumption is a very fair example, as consumptive persons seem of all others to be in the most hopeless state. But though such are often in their own minds, and in the opinion of their friends, not able to go through the fatigue and other unavoidable consequences of child-bearing, I do not recollect one instance of any woman, in that situation, being unequal to her delivery, or having her fate hastened by it. If such women have little strength, they have little difficulty to overcome; the state of the parts which, in a common way, might require the exertion of much force to dilate, corresponding with the force which they are able to exert; and more time only is required. When a prognostic however is made, of the probable event of such labours, it is to be presumed that no particularly untoward circumstance shall occur; for if there should, it cannot be expected, that with extreme debility there should be the same

same power or resources, as in great strength and good spirits.

In constitutions much reduced by a consumption, or a disease of any part not immediately affected by child-bearing, there is, usually, not only sufficient strength for perfecting the business of a common labour, but the patient appears to be relieved for a certain time after her delivery; and then, if they were not dependent on pregnancy, or were incurable, they return, and make their wonted progress.

The effect of diseases seems also in many cases, to be suspended during pregnancy. Of the distinctions to be made in our opinion, of the event of acute diseases, during which a patient may either be delivered at her full time, or suffer abortion, we shall speak when we come to the subject of uterine hemorrhages.

7. *Fever or local inflammation.*

On the accession of labours, there is usually some increase of heat, of the quickness of the pulse, thirst, flushed cheeks, and a general feverish disposition; and commonly these con-
 tinue

tinue in proportion to the exertions required or made for the completion of the labour, with respect to which they are, properly speaking, merely symptomatic. But in some cases the excitement is too great, and instead of helping the action of the parts concerned in parturition, it prevents their acting with regularity or energy. Whenever the pains of labour are feeble, it is a vulgar custom, without regard to the cause, to give cordials very freely, with the view of accelerating their returns, or of strengthening them; though under many circumstances, by such proceeding * we evidently add to the evils we mean to remove. In some cases also, from the acuteness and constancy of the pain which the patient endures, and from its situation also, it may be readily distinguished from that which is occasioned by the action of the *uterus*, giving us too much reason to suspect, that some of the con-

* *Lord Bacon* had a clear idea of this, though by the manner of expression, his meaning is rendered somewhat obscure: “To procure easy travails of women, the intention is to bring down the child, whereunto they say the loadstone helpeth; but the best help is to stay the coming down too fast.”

Nat. Hist. cent. x. 968.

tents of the *abdomen* are already in a state of inflammation which may require immediate attention.

It does not seem necessary to bleed every patient on the accession of labour, and for some it must be highly improper. But whenever the feverish symptoms become violent, it is I believe universally proper ; the quantity of blood taken away being suited to the degree of fever, and to the constitution of the patient, and much service will also be done by the frequent exhibition of emollient clysters, by keeping the room cool and well aired, by giving cooling drinks and medicines, and by keeping the patient in a quiet state. When the fever is removed, the natural pains will come on, and perform their office with propriety and success. Independently of fever, when the exertions which the patient makes are vehement, if she be plethoric, there is on that account sometimes a necessity of taking away some blood ; for during these vehement exertions, if the blood-vessels are distended, some of them may give way, and the patient be brought into the most imminent danger, before the delivery then at hand be completed.

ed. Of one instance I have been informed by the medical attendant, in which a patient thus circumstanced burst a blood-vessel and died immediately, in the exertions of the very pain by which the child was expelled.

8. *Want of Irritability in the Constitution.*

Under many circumstances which occur in the practice of medicine, it has been observed, that when a cause of pain exists, it is found to produce an effect quite contrary to what might be expected: that is, instead of exciting the powers of any one part, or of the whole frame to action, it creates a partial or universal insensibility, and a disproportionate action. In some cases, on the accession of labour, the cause, instead of raising a disposition to act, or a power of acting with energy in the parts concerned, seems to lessen both the disposition and power to act, and in some cases to deprive them, for a certain time, of all power, as effectually as if they were become paralytic. Inconveniencies of this kind are most frequently observed to take place in fat and inactive women, and such, in spite of all the means which can be safely used, will necessarily have very slow and lingering labours;

and though they may at length be delivered by their pains, feeble as they are, when there is no material cause of obstruction, much time will be required for every part of the process. I have often suspected that the foundation of this imperfect action, or total inaction in the advanced state of labour, may have been laid by some error or accident in the beginning, perhaps by exciting the action prematurely, which will, of course, cease when the artificial cause is removed *.

The circumstances attending labours are generally alike, yet in many women they are marked with some peculiarity, most frequently in the time required for their completion. When there has been an opportunity of observing the progress of labour in two or three instances, we shall be able to tell what will be the probable termination of a future labour in the same person, and when it will take place; and we can no more controul the order of a labour in one woman, so as to make it correspond with or exactly resemble that of another, than we can judge of the quantity of food which one person may require by that which is sufficient for another, or regulate any

* See Vol. I. Chap. v. Sect. xi.

other function of the body. One woman may require twelve hours for the production of the same effects in the time of labour, that another may finish in four hours; and it would be in vain to attempt to make an alteration, because the reason exists in some essential property of the constitution, beyond the power of medicine, or of any method to alter.

9. *Passions of the Mind.*

As the infirmities and particular state of the body have a powerful influence upon the mind, and as the affections of the mind have, on various occasions, a reciprocal effect upon the body, it might be reasonably expected, that the progress of a labour should be forwarded or hindered by the passions. It is constantly found, that the fear of a labour, or the same impression from any other cause at the time of labour, lessens the energy of all the powers of the constitution, and diminishes, or wholly suppresses the action of the parts concerned in parturition. It is also observed, that a cheerful flow of the spirits, which arises from the hope of an happy event, inspires women with an activity and resolution which are extremely useful and favourable in that situation.

situation. In the time of a labour proceeding very slowly or irregularly, doubts and fears in the mind of the patient have an evident and great influence upon the pains; and when these are removed, and her resolution confirmed, she will go on with courage, and effects will be produced which would have been impossible if she had remained in a state of depression. The intelligent practitioner will avail himself of the knowledge of these things, and by his discretion he will inspire his patient with sentiments which will enable her to go through difficulties, which to her feelings, and perhaps to his own judgment, appeared unfurmountable. He will also regulate the conduct of all her attendants and friends, and lead them step by step to co-operate in his views and intentions, which will at length terminate to the real advantage of his patient, the satisfaction of her friends, and the increase of his own reputation.

10. *General Deformity.*

Many women who are gibbous or distorted in the course of the spine, have the *pelvis* well formed, and there are a few in general appearance perfectly straight, who have yet
some

some defect in the *pelvis*. Of the ease or difficulty of labours, depending upon the capacity or form of the *pelvis*, we are to speak in another place. Those who are gibbous, are not unfrequently asthmatic, or have some infirmity which prevents their breathing freely, or the retention of their breath; and such must suffer some inconvenience at the time of labour, though the action of the *uterus* may be proper, and all the parts concerned in parturition in a natural state. For as both the instinctive and voluntary force, especially the latter, are affected by the manner of breathing, and duly exerted only when the breath is retained, and this not being under such circumstances possible, of course the progress of the labour must be retarded. Should there be any reason to suspect inflammation about the *thorax*, particular attention must be paid to it, otherwise we have only to give more time for the completion of the labour, and to wait for that effect from a repetition of feeble pains, which, without this inconvenience, would have been produced by a smaller number.

SECTION V.

ON THE SECOND ORDER,

OR

Those Labours which are rendered difficult by the Rigidity of the Parts to be dilated.

1. *First Child.*

EVERY woman is expected to have a more tedious labour with her first, than with subsequent children, and the difference is not unusually in proportion to the number which she has had. Thus if a woman were twenty-four hours in labour with her first child, she might be six with her second, and with the rest four, or perhaps two; but from any general estimate of this kind there will be many deviations. It was before observed, that when women have had several children, the practitioner is often able to form a tolerably precise opinion of the kind of labour which they will be likely to have, and which may be as peculiar to their constitutions, in manner and time,

time, as any other function of the body : and it is no more in our power to change this constitutional labour, as it may be called, than it is to alter the frame of the body, or any of the functions thereon depending.

The difficulty with which first labours are often completed, not only depends upon the greater rigidity of the parts, or upon their reaction, but on the imperfection or irregularity of the action also, by which they are to be dilated ; for this is generally far less perfect and regular in the first instance, than when the same office has been frequently performed. But though there is somewhat greater chance of women wanting assistance with first labours than in subsequent ones, there may be no specific cause of difficulty, and they generally require only more time to be given for their completion.

2. *Advanced in Age.*

If a woman be far advanced in age at the time of having her first child, the difficulty attending her labour may sometimes be expected to be greater. At a certain time of life, every woman arrives at maturity, or that period when she may be considered as having
acquired

acquired the greatest degree of perfection of which her frame is capable; when the inconveniencies of youth are passed, and those of age are not arrived. The state of perfection, the time of which will vary in different constitutions and climates, and which we may conclude to be best fitted for the act of parturition, may continue for many years. But if a woman should first be with child before or after this time of perfection, she will be liable to difficulties, as in the one case she would be scarcely able to bear without injury the changes she must undergo; and in the other, the firmness which all the parts have acquired, would lessen their disposition or capability of dilating. Greater force will therefore be necessary, or the same degree of force must be continued for a longer time; in other words, she must have a sharper, or a longer labour. In this country there has seldom been any reason to suspect women to be pregnant before they were able to bring forth children without any or much inconvenience on that account. For the prevention of such difficulties as may attend the first act of parturition in those who are advanced in age, we have been advised to order frequent
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and small bleedings towards the conclusion of pregnancy, that the patient should sit over the steam of warm water every night at bedtime, and afterwards anoint the external parts with some unctuous application. Perhaps there is not authority for saying, that no advantage can be derived from the use of these or such like means; but certainly the impression made upon the mind of the patient by the novelty and peculiarity of the method, will, in patients of a timid disposition, raise such apprehensions of danger and difficulty, as will over-balance the good which can possibly be derived from them. It is therefore better to omit the use of any such means on this account, more especially as it does not constantly happen, that the difficulty of labour is in proportion to the age of the patient when she has her first child; that being in many cases, as easy at forty years of age or upwards, as if she was only twenty-five. In the worst labours arising from this cause, there is no peculiarity in the difficulties, but merely an increase of those which are produced by the rigidity of the parts, and therefore more time only, is in general required for their completion.

3. *Too early Rupture of the Membranes.*

The premature rupture of the membranes, whether natural or artificial, has been often mentioned as the cause of much mischief and of many tedious or difficult labours. If it be allowed that the membranes containing the waters were intended to be the medium by which the *os uteri*, and other tender parts, ought to be dilated, some inconvenience must arise when these are broken and the waters discharged, the head of the child being substituted for them; and this being a firmer and less accommodating body, cannot, for a long time, be admitted within the circle of the *os uteri*, which will of necessity be dilated more untowardly and more painfully.

After the rupture of the membranes, many hours or several days sometimes pass before the accession of labour, and the difficulties arising from this cause, even in first labours, will then be very much lessened, if the patient has generally lain in a recumbent position, and we have deferred, as far as was in our power, the coming on of the action of the *uterus*, till the most perfect disposition to dilate may be previously assumed by the parts. More pain will be endured, and a longer time will

will certainly be required for completing labours attended with this circumstance only, but they may in general be more properly called lingering or tedious, than really difficult.

4. *Oblique Position of the Os Uteri.*

The natural position of the *os uteri*, and that in which it is most conveniently distended, is at the centre of the superior aperture of the *pelvis*; and when thus placed, the effect of the action of the *uterus* is most favourably produced. But the *os uteri* is seldom found exactly in this situation, and in some cases is projected on either side, and in others so far backwards that it cannot be felt for many hours after the commencement of labour. This oblique position of the *os uteri*, to what direction soever it may tend, has been considered not only as a frequent, but as the most general cause of difficult labours; and this doctrine was, at one period of time, taught and received in all the schools of midwifery in Europe. In every inquiry after knowledge, in almost any science, opinions may be advanced, which sometimes lead to further improvement; but when experience has proved, opinions should end; for if so much regard is paid to opinions as to found any certain practice

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tice upon them, and they should prove erroneous, they become the source of much mischief. The present case is a striking example of the truth of this observation; for when it was presumed that every difficult labour was occasioned by the oblique position of the *os uteri*, it was immediately supposed necessary to remedy the inconvenience thence arising by manual assistance, and to drag the *os uteri* from its oblique to a central position during the time of every pain. The opinion of the oblique position of the *os uteri* being the chief cause of difficult labours, is now fully proved to be erroneous; and though it were oblique, such position is not to be considered as a general cause of the difficulty, but as an accompaniment of some other primary cause. Thus when the *pelvis* is distorted, the *os uteri* is constantly found in an oblique situation, yet the difficulty of the labour, as well as the obliquity, are occasioned by the distortion.

It must however be allowed, that some labours are procrastinated by the mere oblique position of the *os uteri*, and that it is often combined with other causes of difficult labours, though, singly, it is seldom of sufficient importance to be the cause of truly difficult ones. But when it does retard a labour, or accompany

company a difficult labour, it does not require any manual assistance, or that we should retract it to a central position with respect to the cavity of the *pelvis*; both the thing itself and the difficulty thence arising will be obviated, without detriment or much trouble, if the patient be confined to a proper position. If, for example, the *os uteri* be projected to the left side, she ought to rest as much as possible on the same side, and so of the right; if it be projected backwards, which is always the case when we cannot reach the *os uteri* in the beginning or early part of a labour, she ought to lie upon her back. By this method the *fundus* of the *uterus*, constantly leaning or inclining to the side of the obliquity, will gradually but effectually project the *os uteri* more and more towards a central position.

Cases have been recorded, in which it was said that the *os uteri* was perfectly closed, and in which it has not only been proposed to make an artificial opening instead of the closed natural one, but the operation has actually been performed. I do not know that I should be justified in saying that such cases have never occurred, because they have not occurred in my practice; but I am persuaded that there

there has been an error in this account, and that what has been called a perfect closure of the *os uteri* has not been such, but that we have been unable to discover it by reason of its obliquity.

5. *Extreme Rigidity of the Os Uteri.*

Difficult, as well as tedious and very painful labours are frequently occasioned by the unusually rigid state of the *os uteri*. The manner of, and the time required for, its dilatation will depend upon two circumstances; first, the degree of disposition to dilate which it may have previously acquired; and secondly, the degree or force of the action exerted by the *uterus*. The former of these is, in general, far less perfect with first than with subsequent children, even presuming that it is in its most natural state; but when the *os uteri* assumes from any cause a still greater indisposition to dilate, of course the labour will be both more difficult and tedious. In a first labour it not unfrequently happens, that the *os uteri* may not be dilated in less than twenty-four or even forty hours, when the rest of the labour may be completed in four, or perhaps a shorter time, yet the very same person may have the
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whole process with her next child completed within six hours or even a shorter time.

We have before taken notice of the advantages arising from the changes in the state of the soft parts being perfected, before the accession of labour. But when these are as favourable as can be wished, by the very action of the *uterus* pressing its contents upon the *os uteri*, and much more frequently by attempts to dilate it artificially, this part may become inflamed, and indisposed to dilate according to the degree of inflammation. The inflamed state of the part is often indicated by its heat and dryness, but whenever it is extremely rigid, and there has been a long continued action of the *uterus*, with little or no advantage, the impediment to the progress of the labour being clearly occasioned by the resistance made by the *os uteri*, I believe it is always right to consider that part as inflamed. If this be allowed, instead of attempting to dilate it artificially, it is the proper object of art, to recover in the first place the natural disposition to dilate, and then the pains of labour will be equal to the purpose. With this view it will be necessary to take away some

VOL. II. F blood,

blood, to give cooling medicines and drinks, to direct emollient clysters to be frequently injected, and, instead of using any means with the intention of increasing the force of the pains, to confine the patient to a recumbent posture; and to gain, if it were in our power, a suspension of the labour, till the inflammatory disposition be removed, when the dilatation will proceed more speedily, less painfully, and without danger.

When a labour comes on prematurely, or before the parts have acquired their dilatable state, as it may be called, the position of the *os uteri* will at that time be very different. In some cases it begins to dilate when it is high up in the *pelvis*, but in others, especially when the *pelvis* is, in comparison with the child, very large, the *os uteri* may be protruded very low down before there is any degree of dilatation, though it be spread so thin over the head of the child, or the membranes, as to give the feel of the membranes alone. If, under these circumstances, the external parts should be much relaxed, and the pains at the same time strong, it is possible for the head of the child to be expelled though enveloped in the *os uteri*,
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and much mischief may be thereby occasioned *. For the prevention of this accident, or any tendency to it, when there is reason to dread it, the patient ought to be confined to an horizontal position, and the practitioner to restrain the advancement of the head; or, if the case has actually happened, to use all the means he safely can, to extricate the head and to support or replace the *os uteri*. When the *pelvis* is large, and the head of the child, being moved from its resting place upon the *pubis*, drops by its own weight into the lower part of the cavity of the *pelvis*, bearing the *os uteri* before it, the accident often becomes a cause of a *proci-dentia* or *prolapsus* of the *uterus*, which cannot, as far as I know, be always prevented. All that art dictates to be done at the time of labour, is to render this as slow and gradual as possible, and after delivery to confine the patient to her bed for a longer time.

6. *Uncommon Rigidity of the external Parts.*

The state of the external, as well as of the internal parts is very different in different wo-

* *Os uteri aliquando prolabitur.*

RUYSCH. *Obs. Anatom.* XXV.

men, both in the beginning and in the progress of labours. Even in first labours they readily yield in some women, so as to allow the head of the child to pass through them with great facility and safety, but in others they are extremely rigid and unyielding, and withstand the action of the *uterus*, though strong, for a very long time; and then do not dilate without great danger of laceration. A more difficult dilatation is always to be expected in first labours than in others, and more care is required to prevent a laceration. The state of these parts is however very different, and they require some attention in every labour. There ought to be, and usually is a correspondence between the state of the parts and the power of the pains; but in some cases the external parts are rigid when the pains are feeble, whilst in others, when the parts are disposed to dilate, the pains are exceedingly strong, pushing, with unabating force, the head of the child, so that the parts must either dilate or be lacerated. Of many of these circumstances we have already spoken.

In first labours the external parts may require one, or several hours continuance of the pains, before they are sufficiently dilated to
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allow the head of the child to pass through them without danger of laceration; but the difficulty thence arising does not seem to require, or to be relieved by our interposition, farther than to prevent injury as far as that is in our power, by too speedy an exclusion of the head of the child, in the manner before advised. The merit of our conduct under these circumstances will be chiefly negative; for as we cannot give to the parts their disposition to dilate, and ought not to dilate them artificially, there only remains for us to wait the due time in order to prevent mischief; art being more frequently exercised on such occasions in remedying the evils which the mistaken exercise of the art has produced, than in rectifying those which are necessary or unavoidable. It is also to be observed, when the head of the child passes through the inferior aperture of the *pelvis* with difficulty, though the external parts are pressed upon with considerable force, that the impediment to the delivery does not always arise from the resistance made by these, but more properly from the elongation or bending of the spinous processes of the *ischia*, and the labour is then to be referred to the next order.

SECTION VI.

ON THE THIRD ORDER,

OR

Labours rendered difficult by disproportion between the dimensions of the cavity of the Pelvis and the Head of the Child.

I. *Original Smallness of the Pelvis.*

THE cavity of the *pelvis* in women generally bears a certain proportion to the common size of the heads of children ; yet as they both admit of considerable variation, independent of distortion or disease, it is possible that a woman with a *pelvis* rather under the common dimensions, may have conceived a child far beyond the usual size ; and when this is the case, there must of course be an increased difficulty at the time of parturition. When therefore the smallness of the cavity of the *pelvis*, and the largeness of the head of the child are mentioned, they are to be considered as relative and not as positive terms ; because

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the *pelvis* of some individual women may be so large as to suffer the largest head of a child of which we have any example, to pass through it; and the smallest head may be esteemed large, if compared with a yet smaller *pelvis*.

Though a labour may from either of these causes, separate or combined, be rendered more tedious and painful than usual, as in consequence of the action of the *uterus* the head of a child rather larger than ordinary will be compressed into a much less compass, and moulded to the form as well as the dimensions of the cavity of the *pelvis*, there is not usually occasion for the assistance of art, if the labour be in other respects natural. But we are to wait patiently for those changes, which in due time may be reasonably expected, and scarcely ever fail, to take place.

2. *Distortion of the Pelvis.*

On the causes, kinds, and degrees of distortion of the *pelvis*, we have already spoken very fully *. The effects produced, or the impediments occasioned by this distortion, at the time of parturition, will somewhat depend upon the part distorted, but chiefly on the de-

* See Vol. I. Chap. i. Sect. x.

gree of change in, or reduction of the dimensions of the cavity, by which the natural relation between it and the size of the head of the child is perverted or destroyed. Distortion of the *pelvis* at the superior aperture creates an obstruction to the passage of the head of the child, which will be overcome with more difficulty by the powers of the constitution, and which will be more inconveniently managed by art, than an equal degree of obstruction in the lower part of the *pelvis*. The greatness of the difficulty will nevertheless chiefly depend upon the degree; and in the various degrees which are found to occur, the practitioner may see a cause for every kind of difficulty which he may meet with in practice. A small degree of distortion may occasion a difficult labour of that kind which may not be an object proper for the exercise of his art, as it will at length be completed by the long continued action of the *uterus*, first moulding and reducing the form and size of the head, till it is adapted to that of the *pelvis*, and then forcing it through the diminished cavity. Or, the degree of distortion may be such, that notwithstanding all the moulding and reduction of the head, which can be accomplished
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by time and the efforts of the constitution, there does not remain sufficient power to expel the head; but it may be brought into such a situation, as to afford us the hope of safely delivering the patient by art, and of preserving the life of the child. Or, the distortion may be so considerable, that it is impossible for the head of the child to be expelled without lessening it, and the child, if living, must be sacrificed to the safety of the parent. Or, lastly, the distortion may be supposed so great, that if the head of the child were lessened, there would not be a possibility of extracting it, and we must either submit to lose the lives both of the parent and child, or attempt to save that of the latter, by the *cesarean* section, or by some other operation almost equally hazardous.

In many of those cases in which there is a very great degree of distortion of the *pelvis*, the impossibility of the head of the child passing through it, is self-evident, and readily discovered on the first examination *per vaginam*. But in less degrees of distortion, no judgment can be formed *à priori* whether the head can pass or not; and we ought to defer any determination upon the necessity or propriety of giving assistance, as well as of the kind of assistance,

ance, till we are convinced by consequences that the difficulty cannot be overcome by the powers of the constitution; and the conviction is in general not satisfactory, till the efforts of the patient are discontinued or cease entirely. Degrees of difficulty, to our apprehension insurmountable, are often overcome by the mere force of the pains; and so long as these continue vigorous, we are not to despair of a happy event; but encouraged by experience, and supported and justified by moral as well as scientific principles, we must rely upon the advantages which time and proper conduct may afford.

The far greater part of those labours which are rendered difficult by the distortion of the *pelvis*, only require a longer time for their completion. Some however demand the assistance of art; and when that is the case, the kind of assistance must vary according to circumstances. But these will be more particularly stated when we come to speak of the various operations in the practice of midwifery.

3. *Head of the child uncommonly large; or too much ossified.*

No arguments are required to prove that a
small

small body will pass through a small space with more facility than one that is large; the size of the body being supposed to bear any relation to the dimensions of the space. Of course, it may be presumed that the larger the head of the child is at the time of birth, with the greater difficulty it will be expelled. Should the *pelvis* not be distorted, but of a common size, we may always expect that the woman will be ultimately delivered by her natural pains, if there be no other cause of difficulty than the largeness of the head, though a longer time may be required for the completion of the labour.

It is not merely from the size of the head of the child that a labour may be rendered more tedious, more painful, or even truly difficult. The connection of the bones of which the head is constructed, is such as to allow of considerable diminution and change of form in its passage through the *pelvis*. The extreme degree of diminution and change which it is generally capable of undergoing, is perhaps impossible to be determined; but it does not seem unreasonable to conjecture that it may be reduced to one third of its original size, without the destruction or even injury of the child

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from the compression ; the alteration being so gradual. The advantages gained by this compression of the head in all cases of difficulty, occasioned by its natural smallness, or in less degrees of distortion, are often greater than could have been reasonably hoped for, as was before observed. But as there is great difference in the degree of ossification in the heads of different children at the time of birth, those heads which are most perfectly ossified, must of course be capable of undergoing the least change ; and the degree of change which they can undergo, must be produced with the greatest difficulty, and purchased at the expence of more severe or longer continued pains. On this account a large head, with a very imperfect ossification, is often found to pass through a *pelvis* which might be considered as relatively small, with more ease than a smaller head in which the ossification was more complete ; and yet the cause of the delay may not be discovered before the birth of the child. In cases of difficult labour proceeding from these and similar causes, it not being in our choice to select the circumstances, all that we can do is to manage such as occur in the most prudent manner ; and we have commonly to wait only
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for those effects to be produced which may be esteemed as consequences of the efforts of the constitution fairly exerted, and never to despair so long as the natural efforts are properly continued.

4. *Head of the Child enlarged by Disease.*

Two diseases have been mentioned by writers as the cause of this enlargement, tumours growing on the heads of children, and the hydrocephalus; but either of these very rarely occur. With respect to the first, it has been said, that when the tumour, of whatever kind it may be, is of such a size as to be an impediment to the birth of the child, it should and may be opened or extirpated, and that the operation is not only perfectly consistent with the safety of the mother, but frequently with that of the child also. Of the existence of these tumours the instances recorded do not leave a doubt*; nor of the possibility, when they are large, of their obstructing the delivery of the patient: but of their extirpation with safety to the child, I should very much

* Partus difficilis a tumoribus, è capitibus foetuum dependentibus.

RUYSCH. Obs. Anatom. LII.

doubt,

doubt, though no human being can circumscribe possibility. As it is the duty, and must ever be the solicitous wish of every practitioner to preserve a life, when it is in his power, he may be tempted to try the extent of his art, when there is little hope of success. From long continued compression the integuments of the head of the child may become so much tumefied, and altered from their natural form and state, as sometimes to give the feel of a distinct and adventitious tumour; and yet simply considered, such certainly do not require any assistance of this kind. But when there really are any unnatural tumours or excrescences, the point of practice would depend upon the degree of impediment to the passage of the head which might be thereby occasioned; or upon the nature of the tumour, whether it could be extirpated, or only admitted of an opening to be made into it for the purpose of lessening its bulk; or if neither of these could be done with propriety, by acting as if no such tumour existed, on the general principles by which we are guided in difficult labours.

With regard to the hydrocephalus, which if of a certain size, would certainly be a great obstacle to the delivery, this is not readily to be

be distinguished in the early part of a labour, because the membranes of the *ovum* in some cases, resemble by their thickness the integuments of the head in others. But if we were assured that an hydrocephalus did exist, there would not always be occasion for us to act; as it is far more eligible even then to wait so long as to give time for the expulsion of the head of the child by the natural efforts, if they be equal to that effect. Should the head be so much enlarged by the quantity of fluid contained in it, that it was too large to pass, even in that case the integuments will generally burst by the force of the pains. But when the fact is ascertained, and the labour is rendered extremely tedious and lingering from this cause, or if any suspicious symptoms should arise, it does not seem reasonable to allow the patient to undergo such long continued pains as when we have any hope of saving the life of the child. When we have determined upon the necessity or propriety of delivering the patient, all that generally is necessary to be done, is merely to perforate the integuments of the head, immediately after which the water flowing away, the head is speedily expelled, and the birth soon and easily completed.

5. *Face inclined towards the PUBES.*

On a former occasion we have mentioned that there are four varieties in the position of the head of the child at the time of birth. The first when the *vertex* or hind head is turned towards the *pubes*: the second when the face is turned towards the *pubes*: the third, when the head presents with one or both arms: the fourth when the face presents. The first of these may be considered as the standard position, because it is not only the most common, but the most easy also; the head of the child being so constructed as to admit, in that position, of the greatest and most ready compression and adaptation to the *pelvis*. But the other positions are not to be considered as constituting labours of any other class, but as varieties of the natural position, though they must of necessity occasion delay in all labours in which they happen; either because a portion of that space which is wholly devoted to the head of the child, is occupied by some other part, unfavourably, or because the bones of the *cranium* are more slowly and imperfectly conformed to the size or shape of the *pelvis*. When the face of the child is inclined towards the *pubes*, the peculiarity of the position is not usually discovered

discovered in the early part of the labour, nor even when the first stage is completed, the practitioner being generally satisfied with knowing that it is a presentation of the head. But when there is any unusual delay, perhaps without any very obvious cause, it then becomes a duty to investigate and explore the cause, and it is not a very unfrequent thing to find the face turned towards the *pubes*. This position is most readily known by our being able to feel the greater fontanelle in a common examination, though it is also proved by other circumstances relating to various parts of the head, which may be readily distinguished. When this is found to be the position, it does not follow that any thing ought to be done, but we are to wait a longer time; because as experience has proved that the head in this position may be, and almost universally is, ultimately expelled by the natural efforts, so long as these are continued, no artificial help should be given or attempted. But when the pains cease, or when we are fully convinced that they are unequal to the exigencies of the case, such assistance must be given as the situation of the parent may require, and allow.

With this position of the head, besides the

greater length of time which may be required for moulding and expelling it, there will also be a greater distention of the external parts, because the hindhead cannot be cleared of the *perinæum* before the chin has descended as low as the inferior edge of the *symphysis* of the *ossa pubis*; by which an inconvenience is produced equal to what an increased depth of the cavity of the *pelvis* would occasion, or a deficiency in the arch of the *pubes*. There are also some peculiarities in the operation when we deliver with the *forceps* or *vectis*; but of these we shall speak when we come to the directions for the use of those instruments.

6. *Presentation of the Face.*

The presentation of the face is discovered by the general inequalities of the presenting part, or by the distinction of the particular parts, as the eyes, the nose, mouth, or chin. In this presentation the child will generally be expelled by the natural efforts, but a much greater length of time will be required for the completion of the labour, for the reasons mentioned under the last clause, which are in this perhaps increased. But the child may be born without any injury, though the face will some-
times

times be swelled in an astonishing manner, and the external parts of the mother being infinitely more distended than in a natural position, greater care is necessary to prevent their laceration.

If after the long continuance of the labour we are convinced that extraordinary assistance is required, then the same observation may be made with regard to the use of the *forceps* or *vestis* as in the preceding article; but of the peculiar conduct which it may be necessary to pursue, we shall speak hereafter.

7. *Head presenting with one or both Arms.*

Though the head should present with one or both arms, experience hath fully proved that a woman may be delivered by the natural efforts with safety to herself, and without prejudice to her child, if the *pelvis* be well formed. But as a part of the cavity, which should be appropriated to the head, will be filled by the additional bulk of the arms, there will be an evil similar to what would be produced by a small, or by a somewhat distorted *pelvis*. Should the *pelvis* be barely of sufficient dimensions to allow the head of the child to pass through it, then the additional bulk of the

arms may render the passage of the head impossible; or the labour may be so much retarded as to make it what is properly called difficult.

In the beginning or in the course of a labour of this kind, the practitioner will often be able to return the presenting arm or arms beyond the head, without any detriment; at all events, he must be very careful not to solicit the descent of the arm before the head, lest he should change the whole situation of the child, and convert that which would have been only a variety of a natural, into a preternatural labour.

In some cases we are enabled to feel the head, a foot, and an arm at the same time, and it will then be expedient to grasp and bring down the foot, and to deliver in that manner. But it behoveth us to distinguish very cautiously between a hand and a foot, because the mistake would lead us to the necessity of turning the child, an operation which would otherwise not have been required.

In presentations of the head, together with one or both arms, unless there should be any particular reason for wishing to turn the child, the propriety of which must rest upon the judgment

judgment of the practitioner, we are to be prepared, and wait with patience for the expulsion of the child by the natural efforts. When we are convinced by their failure or cessation, that these are not equal to the effect, such assistance is to be given as the nature of the case may require; and whatever the instruments which it may be necessary to use, are, their action must be nearly the same, as if the arms had not been in the *pelvis*.

Whether these cases are completed by the natural efforts, or by the assistance of instruments, the arms of the child will be very much tumefied or bruised, and the child is for a certain time as unable to use them as if they were paralytic. But by the help of fomentations and poultices, if needful, and by moderate motion and gentle friction, their natural appearance and use are recovered in the course of a few days; at least I have not seen an instance of any permanent mischief from this cause.

When the extremities present at the time of birth, there is often a doubt whether the child be living or not, unless it can be perceived to move. Now the fact may be ascertained by the consequences of any violence, as no part of a dead child can either tumefy or

change its colour, however compressed it may be, and only shews one effect of violence, that of solution of continuity.

SECTION VII.

ON THE FOURTH ORDER,

OR,

Labours rendered difficult by Diseases of the soft Parts.

I. *Suppression of Urine.*

THE various affections of the urinary bladder during pregnancy, have been already mentioned. On the commencement of labour, it was said that an involuntary discharge of the urine might be occasioned; but there is more frequently an inclination and difficulty in voiding it, and sometimes there is a total suppression. The inconveniencies thence arising will be according to the quantity of urine retained, and to the length of time that the bladder may continue distended. The first will hinder the proper action of the *uterus*, and will be an impediment to the passage of the head of the child, occasioning

occasioning a less space for it to pass through, and projecting it also out of its proper direction. By the latter the bladder itself may be injured in consequence of the pressure which it undergoes from the repeated actions of the *uterus*, causing inflammation terminating in partial gangrene; and in some cases in which relief was not given, the bladder has even been ruptured, the patient being thereby destroyed*.

In the beginning and course of labours, especially of those which are expected to be tedious or difficult, great attention is therefore to be paid to the state of the bladder; the patient is to be frequently admonished to void the urine, and in all cases of doubt we are not to confide in any representation made to us, but we are to be satisfied only with seeing the quantity of urine which has been discharged; error being often committed by confounding the water of the *ovum* with the urine. By the application of the hand to the *abdomen* of the patient, it is often an easy matter to distinguish between the tumour of the *uterus*, and the flattened but circumscribed tumour of the bladder,

* See Chapman, page 143; see also Medical Observations and Inquiries, vol. iv.

which lies below and before that formed by the *uterus*. The patient herself is frequently capable also of distinguishing that pain which is the consequence of the action of the *uterus*, from that which is occasioned by the pressure upon the distended bladder.

To remove the obstacle to the passage of the child, which may be produced by the distention of the bladder; and to prevent any injury to the bladder itself, it is necessary to draw off the urine with the catheter, whenever it is retained beyond a certain time or degree. In slighter cases the common catheter will answer the purpose; but when the head has been long wedged in the *pelvis*, there is not sufficient room for that to pass, even though the head be elevated or pressed towards the hollow of the *sacrum*. But in such cases the flattened catheter, contrived by my very worthy and ingenious friend Dr. *Christopher Kelly*, will often pass with ease and convenience; though the elastic catheter is often to be preferred even to this. But whatever catheter it may be found expedient to use, or however necessary it may be to draw off the urine, we are to take care not to introduce the instrument with violence, because we may do as
much

much positive mischief with the instrument, as we aim or wish to prevent. In some cases, though we are assured that there is a great quantity of urine in the bladder, the head of the child is so immovably locked in the *pelvis*, that we cannot possibly introduce any catheter, and are therefore obliged to submit to the inconveniencies which may follow the distention of the bladder. But if care was taken in the beginning of labour, this does not often happen; nor is it always attended with the evils we might dread, the head of the child being at length pressed so low as to allow the urine to escape, though very slowly. But in all such cases it will be prudent and necessary to introduce the catheter before or soon after the expulsion of the *placenta*, that we may prevent the mischief which might be expected to follow the distention of the bladder, if that was to remain many hours after the delivery,

2. *Stone in the Bladder.*

If a woman should have a stone in the bladder, there would be no reason why she should not be with child, and proceed through her pregnancy without molestation. Nor, if it
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was of a small size, would it be any impediment to her delivery ; though if it was large, the head of the child could not pass through the *pelvis*, or not without much trouble and inconvenience. Of this case I have never met with an instance in practice, and may therefore be allowed to consider it as very rare, though there does not appear to be any reason for judging it impossible. I have reflected upon the case, and upon the conduct which it might be necessary to pursue, if it had occurred to me ; and though it behoves me to speak with reserve, and to be satisfied if little confidence be placed in what I advance, it is better on the whole to give my opinion, than to leave the matter without considering, or making mention of it.

In the beginning of labour, supposing there is a stone of a large size in the bladder, one of these consequences must follow ; the head of the child must advance before the stone, or the stone must be protruded before the head of the child. If the former should be the case, we might presume that the labour would proceed in a natural way, as if the stone did not exist ; there would, at least, be no demand for the assistance of art, and no room to exercise it.

But

But if the stone should be protruded before the head of the child, our conduct must be regulated by the circumstances. It seems reasonable that we should first attempt to raise the head in such a manner, and to such a degree as to allow us to return the stone beyond the head. But if that should be found impracticable, either because the head of the child was too far advanced, or firmly locked in the *pelvis*, we must then weigh the evils to be apprehended, from the compression of the soft parts, that is, of the anterior part of the *vagina*, and the posterior part of the bladder, between the head of the child, and the stone in the bladder; besides the distraction of the parts which must be necessarily occasioned. Whatever conduct we might pursue must be attended with some evils, and as it is only in our power to choose the least of these, it seems better even in the time of labour, to suffer the evils which might follow the performance of the operation for extracting the stone, than to suffer those which may be occasioned by the compression and probable laceration. With regard to the operation, there is both less difficulty and danger in it to women than to men, though these will in some measure depend

depend upon the size of the stone. In some cases also in which the stone is contained in a distinct cell of the bladder, and could not therefore be grasped or extracted by the *forceps* when introduced; it has been proposed to make an incision through the anterior part of the *vagina*, directly upon the stone. This operation, which may in some cases be eligible, has been performed twice, by two surgeons of great ability and eminence in the country, and as I was informed, without occasioning the effect to be apprehended; that of leaving a fistulous opening by which the urine would have been voided for the remainder of the patient's life.

3. *Excrescences of the Os Uteri.*

Excrescences of the *os uteri* are usually combined with some degree of scirrhus disposition of that part. It was before observed that these excrescences do not prevent conception, or disturb pregnancy; but according to their size and situation, they must necessarily be obstacles at the time of labour. The following case, which was curious in the circumstances attending, as well as the nature of the complaint, I may be permitted to transcribe, as it was an example

example of an excrescence of the largest size I have ever seen.

In June 1770, I was desired to see a patient in the eighth month of her pregnancy, who in the preceding night had a profuse hemorrhage. Her countenance shewed the effects of the great loss of blood she had sustained; and from the representation of the case given me by the gentleman who was first called in, I concluded that the *placenta* was fixed over the *os uteri*. On examination I felt a very large fleshy tumour at the extremity of the *vagina*, representing and nearly equalling in size the *placenta*, which I judged it to be. Had this been the case, there could not be a doubt of the propriety and necessity of delivering the patient speedily; and with that intention I passed my finger round the tumour, to discover the state of the *os uteri*. But this I could not find, and on a more accurate examination, I was convinced that this tumour was an excrescence growing from the *os uteri*, with a very extended and broad basis. I then concluded that the patient was not with child, notwithstanding the distention of the *abdomen*, but that she laboured under some disease which resembled pregnancy, and that the hemorrhage

rhage was the consequence of the disease. A motion which was very evidently perceived when I applied my hand to the *abdomen*, did not prevail with me to alter this opinion.

It was of all others a case in which a consultation was desirable, both to decide upon the disease, and the measures which it might be necessary to pursue; and several gentlemen of eminence were called in. That she was actually pregnant, was afterwards proved to the satisfaction of every one; and it was then concluded, that such means should be used as might prevent or lessen the hemorrhage, and that we should wait and see what efforts might be naturally made for accomplishing the delivery.

No very urgent symptom occurred till the latter end of July, when the hemorrhage returned in a very alarming way, and it was thought necessary that the patient should be delivered. There was not a possibility of extirpating the tumour, and yet it was of such a size as to prevent the child from being born in any other way than by lessening the head. This was performed; but after many attempts to extract the child, the patient was so exhausted, that it became necessary to leave her
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to her repose, and very soon after our leaving her, she expired.

We were permitted to examine the body. There was no appearance of disease in any of the abdominal *viscera*, or on the external surface of the *uterus*, which was of its regular form; and when a large oval piece was taken out of the anterior part, the child, which had no marks of putrefaction, was found in a natural position. An incision was made on each side of the *cervix* to the *vagina*, and then a large cauliflower excrescence was found growing to the whole anterior part of the *os uteri*. The *placenta* adhered with its whole surface; so that the blood which she had lost must have been wholly discharged from the tumour.

The propriety or advantage of a practice by which the life of neither the parent nor child was preserved, ought to be considered; but such cases occur so rarely, that there is always room for animadversion, when they are concluded. Yet the general principle of its being ever our duty to preserve both their lives, if possible; or to preserve that of the parent; or, if she cannot be preserved, then to save the child, if it is in our power; would have been

a better guide on this occasion, than that which was followed.

Excrescences of a smaller size are not unfrequently met with in practice; and as even these are usually accompanied with some degree of scirrhus disposition of the *os uteri*, more time is required for the completion of the labours. It is to be remarked, that in cases of this kind, there is often a long continuance of the pains without any sensible effect; but all at once, the rigid *os uteri* yields and dilates speedily and unexpectedly, or perhaps in some instances is lacerated. In some cases also, the excrescences are of so tender a structure, that they are crushed by the passage of the head over them, and entirely destroyed. During labours of this kind, and after delivery also, the great object is to guard against all causes of inflammation, at first perhaps local, but afterwards extending to other parts, connected or readily consenting with the *uterus*, and more immediately necessary for the functions of life.

4. *Cicatrices in the Vagina.*

From diseases of the soft parts, especially those arising from violence sustained in former
hard

hard labours, the *vagina* may have become ulcerated; and when care was not taken to prevent the surfaces from abiding in contact with each other, the opposite sides might adhere in different degrees, according to the depth and extent of the ulceration. When the ulceration is slight, and the inflammation is not so great as to bring the tumefied parts into contact, after a certain time they heal; but cicatrices being formed, the diameter of the passage is lessened, and the part is left with a disinclination to yield on any future occasion. In some cases a superficial slough has been thrown off from the whole internal surface of the *vagina*, and cicatrices of an irregular kind formed from the *os uteri* to the external orifice. In other cases there has been a cicatrice only at one part, and if this should happen near the external orifice, the contraction has been such as to mimick an unruptured *hymen*.

Amidst a great variety of cases of cicatrices in the *vagina*, I have not met with one example in which they were able to withstand the pressure of the head of the child, if the pains were of the customary strength. The labours have indeed been retarded, but they have terminated favourably. But when the

difficulty arising from this cause has been combined with other causes, it must of course have added to the trouble which the patient would otherwise have undergone. Or, if the pains should cease before the labour is completed, then such assistance must be given as the case may require; being on our guard that we do not offer assistance before there are proofs of the necessity, and are assured that the difficulty cannot be overcome by the natural efforts.

5. *Adhesion of the Vagina.*

Adhesions of the *vagina* are occasioned by an increased degree of the same causes as those which occasion cicatrices. There may be an adhesion in women who were never pregnant, or it may be the consequence of a slough thrown off after a former labour, with or without the use of instruments *. Cases of adhesions of this kind are commonly mentioned as of very easy management, nothing more be-

* I have been informed of the case of a patient who was in the hands of a very skilful practitioner, in whom, after her delivery, which was not attended with any circumstances of peculiar difficulty, the whole internal surface of the *vagina*, and all the external parts, entirely sloughed away.

ing required, it is said, than to separate the united surfaces with a knife, and to prevent their re-union by the introduction of a tent or canula for that purpose. It is true, when the adhesion has taken place near the external orifice, that it is in general managed without difficulty; but when the parts adhere high up in the *vagina*, then it appears from the structure that there is need of the greatest circumspection, lest on the one hand we perforate the bladder, or, on the other, the *rectum*, all these parts being drawn close together.

In some cases the adhesion is of such a kind, as not to admit or justify any attempt to separate the parts with the knife; but even in these, by suffering the menstruous discharge to be collected, after a certain time, the part, where an incision or puncture with a trocar may be safely made, will sometimes be pointed out, and this being gradually dilated, a cure may be effected.

It is possible for an adhesion to take place after a woman is become pregnant; of course when labour should come on, the contents of the gravid *uterus* would be impelled against the adhering part, which would either separate, or resist the exclusion of the child. In

the former case nothing would be required to be done; but in the latter, it would be necessary to divide the united parts by an incision with great care, and to a certain degree, leaving the full separation to be made by the membranes containing the waters, or by the head of the child.

6. *Steatomatose Tumours.*

Of this cause of difficult labours I have never met with an instance in my own practice; but the following case was communicated to me by a gentleman whose authority is unexceptionable.

A lady, after the birth of her eighth child, fell into a state of bad health, with many painful and troublesome symptoms, but no marked disease. These were by some physicians considered as nervous, by others as scorbutic, and by others as rheumatic, or of a gouty nature. A variety of medicines were given, and means tried for her relief, but without any good effect. At the expiration of two years she became again pregnant. All her former labours had been very easy and natural; but when Dr. *Hunter* was called at the commencement of this, he found an obstruction at the
superior

superior aperture of the *pelvis*, which he believed could only be occasioned by the projection of the lowest lumbar *vertebræ*, or the upper part of the *sacrum*. It was then supposed that she had the *osteosarcosis*, of which her complaints had been the symptoms. It was impossible for her to be delivered in any other way than by lessening the head of the child. She died on the fourth day after her delivery. Leave was given to open the body, and when the *pelvis* was examined, the tumour, which was imagined to be a projection of the bones, was found to be an excrescence of a firm, fatty substance, springing from one side of the upper part of the *sacrum*, and passing across so as to fill up the greater part of the superior aperture of the *pelvis*.

It is probable that the preceding complaints of this lady were occasioned by the pressure of this tumour upon the *uterus*; and had the real state of the case been known before the time of labour, or even during her labour, it does not appear to have been proper, or within the bounds of art, to have attempted or to have afforded her any other assistance.

7. *Enlargement of the Ovaria.*

Diseases of the *ovaria*, both of the scirrhus and dropical kind, especially the latter, are known to be very frequent. Either of these must generally prevent conception; but as one of the *ovaria* may be very much diseased, when the other is in a perfectly healthy state, instances sometimes occur of women becoming pregnant under such circumstances, and then the enlarged or diseased *ovarium* may produce inconveniences during pregnancy, or become an obstacle to the progress of labour.

With the history of two cases of this kind, I was many years ago favoured by Dr. *John Ford*, a gentleman of great skill and experience. In the former he was surprised to find a large and firm tumour lying between the *rectum* and *vagina*, and filling up all the concavity of the *sacrum*, and a considerable share of the cavity of the *pelvis*. Being convinced of the impossibility of the child passing by this tumour, which did not yield or diminish by the force of the pains, it was determined in consultation, that the patient ought to be delivered by lessening the head of the child. The operation was performed with great care, but the patient died at the end of three weeks.

When

When the body was opened, the tumour was found to be an encysted dropfy of the *ovarium*, in which there was a considerable quantity of hair.

In the latter case, which in all its circumstances resembled the former, instead of lessening the head of the child, a trocar was passed through the posterior part of the *vagina*, directly into the tumour. A large quantity of water was immediately discharged, the tumour subsided, and a living child was born without any further assistance. This patient recovered from her lying-in, but some time after becoming hectic, she died at the end of about six months, though from the symptoms it did not appear that the fever was occasioned either by the disease or the operation. This patient was not examined after her death.

Having related these two cases, I have said all which I had to advance on the subject, except that I have met with more than one instance of a circumscribed tumour on one side of the *pelvis*, which I at first suspected to be a diseased *ovarium*. But as these tumours have always given way to the pressure of the head of the child, the passage of which they have only retarded for a short time, I have concluded

they were formed either by some soft fatty substance collecting there, or were cysts containing lymph casually effused, and forming to itself a cyst from the cellular membrane. But on taking an examination after delivery, the tumours were found to have again acquired their primitive form and size.

8. *Rupture of the Uterus.*

The human *uterus* is found to retain its original thickness during the time of pregnancy, notwithstanding its distention; or to become somewhat thicker than it was in the unimpregnated state. This thickness, we have therefore reason to think, is consequent to some principle acquired, and coeval with conception. But if the whole, or any part of the *uterus*, should be deprived of this principle, or affected with any disease destructive of its operation, then the whole *uterus*, or the part so affected, would be mechanically distended, and become thinner in proportion to its distention; and at the time of labour, when the action exerted might be greater than the unthickened part was able to bear, the *uterus* would be of course ruptured. Or if the *uterus* which had acquired its proper thickness, became affected with

with inflammation or any other disease, weakening its power and speedy in its progress, the texture of some part so affected might be destroyed, and the *uterus* ruptured by its own action in the time of labour. Or, independently of disease, the *uterus* may be worn through mechanically, in long and severe labours, by pressure and attrition between the head of the child and the projecting bones in a distorted *pelvis*, especially if they be drawn into points or a sharp edge. Or the *uterus* may be ruptured by violent accidents happening to the mother in the advanced state of pregnancy. It may also be ruptured by attempts to pass the hand for the purpose of turning a child, if it be strongly contracted; but in this last case a rupture could only happen when the force with which the hand was introduced was combined with the proper action of the *uterus*; for no person has the power to force his hand through an healthy and unacting *uterus*. The part of the *uterus* which commonly gives way, whether posterior, which is most common, or anterior, or lateral, is usually near the union of the *cervix* with the *vagina*, in which such a change is made

made at the time of labour that the distinction between them is lost.

Some of the causes of the rupture of the *uterus*, are unavoidable ; for it is not within the sphere of human abilities, to give to any part the principle by which it has the disposition or power to perform any function ; though art may excite the power to action if dormant, or repress it when too vehement. Nor is it possible to discover or prevent the degree of pressure or attrition which some particular part may undergo in a difficult labour, before the effect is produced. But the two other causes, that which is preceded by inflammation, or that which may be occasioned by attempts to turn the child, may be corrected or avoided, by abstaining from the use of all such means as are likely to act as causes of inflammation, or by proper treatment when it does exist, or from making such attempts as may be necessary for the purpose of turning a child, when the action of the *uterus* is strong.

The rupture of the *uterus* is accompanied with a sense of something giving way internally, always perceptible by the patient, with an instant vomiting of brown fluid, and an abatement

abatement or a total cessation of the pain. After these symptoms, by the application of the hand to the *abdomen*, the limbs of the child are so easily distinguished through the integuments, as to leave no room to doubt of the accident; and if the head of the child be not locked in the *pelvis*, it immediately recedes, or even goes out of the reach of a common examination. The death of the patient usually follows soon after the accident, though I have seen a case in which there was reason to believe that the patient walked a considerable distance, and lived several days after a rupture of the *uterus*.

There is certainly little chance of the patient surviving a rupture of the *uterus*, and it might be doubted whether it would be more eligible to suffer the patient to die without giving her further trouble, or whether it was our duty, hopeless as the case must be, to pass the hand into the *uterus*, to turn and deliver the child by the feet; or with the *forceps* or *vectis*, or in any way the case would allow. Whatever were the sentiments of practitioners formerly, is not to us very material; for besides some few others of which I have been informed, or which are recorded,

corded, a case has occurred to my very worthy, able, and experienced friend Dr. *Andrew Douglas*, in which though the *uterus* was ruptured, he turned the child, the patient recovered, and had afterwards children. If no other case had ever occurred, I apprehend that this would be of sufficient authority, to render it in future the indispensable duty of every practitioner to act in a similar manner; and bad as the chance of the patient is, to be strenuous in using all the means which art dictates, to extricate her, if possible, from her danger, or to preserve the child. But for further information on this head, I refer the reader to the Essay on the rupture of the *uterus*, published by Dr. *Douglas*.

SECTION VIII.

THESE causes of difficult labours I have enumerated in this order, with the hope of pointing out a more useful method of arranging the knowledge we possess, of increasing that knowledge, and of removing some part of that obscurity in which the practice of midwifery has been involved, and by which its further improvement hath been hindered. Two things appear in the general result; first, that the evils attending parturition are more frequently adventitious, than unavoidable or of necessity; and secondly, that the native powers of the constitution, when not interrupted, are not only superior to the common obstructions of the process, but in general, to the various kinds and degrees of deviation from the natural course of labours. Yet with every prudential regard to our own conduct, and the most judicious regulation of that of our patients, we shall in practice certainly meet with cases in which, either from the debility of those powers which commonly exist, and
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which are generally exerted; or, from the greatness or stubbornness of some obstructing cause; or, from some cause actually produced by the labour itself, we shall be compelled by necessity to give artificial assistance, or the mother, or child, or both, will be lost.

Before we proceed to the consideration of the various means which have been contrived for the relief of women in cases of difficult parturition, it may be again observed, that the causes of difficulty are generally combined; and as there are very few instances of a disease, according to the simple definition of it, in nosological writers, so there are few examples of difficult labours produced or attended by one single cause. Together with the dribbling of the waters, there will often be a retraction of the head of the child from the shortness of the *funis*; and with great rigidity of the parts, or a small *pelvis*, there may be a weak action of the *uterus*, and so on to an almost endless variety. One cause will however predominate, and of course become the principal object of our attention. But when by time, or art, that cause is removed, we must apply ourselves to the removal of that which is important in the next degree; and sometimes the

the same means may be properly used for the removal of difficulties proceeding from several different causes.

But besides the causes already mentioned, there is one much more frequent than the rest, which is the derangement of the order of the labour by an officious interposition, or by improper management. Upon this subject it would be unpardonable to make an assertion which is not supported by experience; but I am fully convinced that the far greater number of really difficult labours to which I have been called, and I must not conceal the truth on this occasion, some of those which have been originally under my own care, were not of that denomination from unavoidable necessity, but were rendered such by improper management. Nor does the disturbance of the order of a labour, depend upon the practitioner alone; for the intractability of the patient herself*, or of her friends and attendants, which though it may be founded in affection and compassion to her sufferings, may

* De la part de la mere c'est quelquefois sa mauvaise humeur, son impatience, son indocilité, la violence et la irrégularité des mouvements.

also arise from many other motives, is too frequently productive of the same effect.

In the management of difficult labours there is required much previous knowledge and present judgment on the part of the practitioner, to distinguish in cases of great difficulty, which of them may demand the assistance of art, and which may be resigned to the efforts of nature; and there is no situation in which there is occasion for greater address to procure the confidence and co-operation of all the parties concerned; or for more firmness in the pursuit of the negative conduct, which it is absolutely necessary to follow. Whatever may be the resolution of particular women, and whatever may be the general estimation of natural labours, every woman is impressed with the opinion, and the opinion is often well founded, that in difficult ones, her life is to be preserved by the skill and judgment of the practitioner, under whose care she is placed. If therefore her confidence is secured, the delay to give assistance will be construed into a proof that none is required, and of freedom from danger,

The distress and pain which women often endure while they are struggling through a
difficult

difficult labour, is beyond all description, and seems to be more than human nature is able to bear under any other circumstances. The great principle of all their patience and resolution, is perhaps that deep-rooted affection of the parent to the offspring, implanted in the female mind. But the principle of self-preservation, though varying in its operation, will recur, and demand its share of regard. In long continued labours it is therefore proper, by frequent allusions to the child, to encourage and strengthen the former principle, for its power is lessened or overcome by the weight of their present distress; their love for their child is conquered; and the prospect of distant pleasure is not able to stand in competition with the evils of the present moment. With the firmest determination to do what is right, they willingly persuade themselves that the child is dead; that the object for which they should persevere, no longer exists; and the practitioner in opposition to his own feelings, and against the solicitations of those who confide in him, is often the only advocate for the child. But his decision to act in cases in which the life of a child is concerned, must stand upon a better principle than conformity

to the inclinations of others; for though he might avoid present censure, or even gain present credit, by giving artificial assistance unnecessarily, when the case comes to be reviewed, and it always is reviewed, the blame of acting precipitately in cases which do not terminate fortunately, will be cast upon him, and their satisfaction will be established by the discovery of some cause of blame in his conduct. In the exercise of the most hazardous part of a profession, perhaps in general more subject to censure than any other, it behoves us to be particularly circumspect: and though events are often beyond the power of human controul, we may always act with intelligence, with prudence, and firmness; and no man's character can long be supported, if he is not governed by the determination to do what is right, to the best of his own judgment and power.

But however averse the practitioner may be to the use of such means as may be dangerous to, or even destructive of the child, cases must occur in which the assistance of art will be absolutely needful, and the use of instruments justified. As correct a judgment must also be exercised, and equal care taken that he
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does not delay that assistance which may be necessary, so long, that it cannot answer the end for which it was given ; or while he is endeavouring to preserve the life of the child, he may lose that of the mother also, which certainly is of more value.

The intentions in the use of instruments may be of three kinds. First, to preserve the life both of the parent and child : secondly, to preserve the life of the parent ; and thirdly, to preserve the life of the child. The instruments contrived to answer the first intention, are the *fillet*, the *forceps*, and the *vectis*. Of each of these, together with all the collateral circumstances which demand our regard, we shall speak in their turn, and then proceed to the consideration of the other intentions.

CHAPTER XI.

SECTION I.

ON THE FILLET, FORCEPS, AND VECTIS.

WHEN men, first collected into societies, had provided for their subsistence, they would endeavour to amend their state, by removing such evils and inconveniencies as were most urgent, either from their importance or frequency. Next to those arts by which the means of support were acquired, that of medicine would be of principal consideration, as from the nature of their employments, hunting, fishing, pastoral or agricultural, men must have been liable to diseases and to injuries, which, by accident or trial, they would learn some method of relieving; and he that should have acquired the greatest collection of knowledge, or the most dexterous method of applying it to useful purposes, would have become a physician. But the origin and progress

gress of that branch of medicine of which we are treating would be somewhat different. When the customs and manners of life were simple, and not much disposed to produce diseases, difficulty or danger in the parturition of women would seldom occur; and notwithstanding the distress with which they might sometimes be accompanied, the general termination of labours would be easy and safe. In the very few cases which might require more than ordinary assistance, there were none to afford it; and those women who could not bring forth their children by their own efforts, were suffered to die without any attempts being made to relieve them, according to the relations which are given of the people of some countries, even at this day.

As mankind advanced in civilization, the evils attending parturition would probably increase, though ignorance or inability to give relief might long continue; but the supplications for assistance, and the affections of men, would not permit them to remain unconcerned or inactive spectators of the misery of those, to whom they were indebted for the chief part of their happiness. They gave such aid

as their information or ingenuity enabled them to devise, and this, in the first instance consisted of ceremonies and amulets, or medicines *, to which some mysterious properties were attributed, as the skins and some other parts of serpents, the eagle stone, the blood-stone, the stony substance found in the head of a shark, with many others of the like kind; and such things might succour the minds of women, strongly impressed with a sense of their utility, in a state of actual danger, overwhelmed at the same time with extreme pain and apprehension. In times more enlightened, for every kind of distress religion offered its consolations, by soothing the mind, by teaching mankind, when oppressed with difficulties, to use their own endeavours, the necessity of submitting to evils

* It is extremely curious to see the many ancient customs preserved by *Ovid*, in several parts of the *Metamorphoses*.

——— Nec habent sua verba dolores :

Nec Lucina potest parientis voce vocari.

Constitet ad ramos mitis Lucina dolentes ;

Admovitque manus ; et verba puerpera dixit.

Reddit onus ; vagit,que puer, quem mollibus herbis

Naiades impositum, lachrymis unxîre parentis.

METAMORPHOS. Lib. x. Fab. x.

which

which could not be prevented or avoided, and by encouraging with the hope of happy events. After the discovery of the mechanic arts, these were applied to the exigencies of every occasion; and when the sufferings of women in child-birth could no longer be endured, attempts were made to relieve them by extracting, without regard to its safety, the head of a child which could not be expelled by the efforts of the mother; and for this purpose the first kind of *forceps* was invented and used. The same motives of compassion or affection, which led to the wish of relieving women, would readily extend to children; and, to combine the interests of both, fillets and the *forceps*, now in common use, were contrived. When the head of a child was found to be too large to pass through a very small or a distorted *pelvis* with the help of such contrivances, there was no relief to be obtained except the head of the child was lessened; and for this purpose, perforators and crotchets of various kinds were invented. The intrepidity of some man seeing no other way of giving relief, or the desperate resolution of some woman frantic with her sufferings, might lead to a more summary

way of obtaining it * ; and, with a determination to free her from the cause of her misery, or to put an end to her existence, a child might have been extracted through a wound made into the part which contained it; and the manner of performing the Cefarean operation would be shewn.

In some times and countries in which the *forceps* and other instruments of that kind were not known, or their use not fully understood, and afterward, in some cases not thought suitable for their use, it became a custom in many difficult labours, by whatever cause produced, to return the presenting head, to pass the hand into the *uterus*, to turn and deliver the child by the feet. But this operation of turning could only be performed under very limited circumstances; for if the head of the child was very low in the *pelvis*, or the *uterus* strongly contracted round its body, it could not be done, or not without defeating the very purpose for which the operation was perform-

* See London Medical Journal, No. in which there is a curious history of a Negro woman who performed this operation upon herself; given by Mr. E. Home.

ed, producing at the same time great danger to the parent. Yet cases may occur in which by turning the child, the chance of saving its life is greater than can be gained by the use of any instrument, of which the following is an example.

Many years ago I attended a patient in two labours, in both of which there was a necessity of delivering with instruments, on account of the smallness and distortion of the *pelvis*, and neither of the children could be preserved. In her next pregnancy I made a proposal to bring on premature labour, to which she and her friends would not consent, and I was dismissed from my attendance. In the course of twelve or fourteen years she had five more children, not one of which was born living. In the forty-sixth year of her age she proved with child, and again applied to me. When her labour came on, the first stage was suffered to proceed without interruption, but when the membranes broke, I without delay passed my hand into the *uterus*, and easily brought down the feet and body of the child; but the head being stopped by the narrowness of the superior aperture of the *pelvis*, I was obliged to exert, and to continue much force before

fore it could be extracted. The child was born with very little or no appearance of life; but by the strenuous use of the common means recommended for that purpose it was recovered. On the left parietal bone there was a depression of considerable extent, and to my apprehension of full one inch in depth, occasioned by the projection of the *sacrum*; but the depressed part gradually rose, in the course of a few months the bone regained its natural form, and the child was for several years in good health. The woman recovered without any untoward circumstance.

But the success of such attempts to preserve the life of a child is very precarious; and the operation of turning a child under the circumstances before stated, is rather to be considered among those things of which an experienced man may sometimes avail himself in critical situations, than as submitting to the ordinary rules of practice.

SECTION II.

ON FILLETS.

THE fillet used in the practice of midwifery is a single band intended to be fixed upon the head of a child detained in its passage through the *pelvis*, for the purpose of extracting the head.

It has been supposed that fillets were used in the practice of midwifery as early as the time of *Hippocrates*; but whenever they were invented, they have since undergone a variety of changes, by which it was intended to gain some advantage, or to avoid some inconvenience. Fillets were constructed of silk, cotton, linen, or leather of divers kinds, strengthened or rendered more commodious for application, by the addition of cane, whalebone, wire, or very thin and narrow plates of iron, variously braided and worked together according to the opinion or judgment of the contriver.

The manner of applying the fillet was, by conducting it with the finger or an instrument contrived

contrived for the purpose to some fixed point, as the chin, or round the circumference of the head of a child, as high up in the *pelvis* as could be reached; then, after twisting the two ends together to acquire a firm hold, we were taught to extract, in a proper direction, with all the force the fillet enabled us to use, or the necessity of the case might require.

The peculiar advantages expected to be derived from fillets were these. They were supposed to be applicable with great facility in every direction of the head, or when this was too high to allow of the use of any other instrument recommended with the same intention; to supply us with sufficient power to extract the head when detained an unreasonable time, by any cause, to the hazard of the mother or child; and to do less injury to either, on account of the softness and pliability of the materials of which they were composed.

But experience has fully proved that a fillet of any kind could not be safely applied without much difficulty and trouble; that when applied it was very apt to slip; that when it remained fixed, it was often inadequate to the purpose of extracting the head; that it created new difficulties, or added to those which before

fore existed, by changing the direction of the head; and that the injury done to the mother or child was not in proportion to the hardness of the materials of which instruments were constructed, but according to the violence with which they were used.

For these reasons fillets of every kind gradually declined in estimation, and they are now wholly neglected. They may be considered among the first attempts of art to give relief, which have been superseded by other contrivances, equally safe and more efficacious.

SECTION III.

ON THE FORCEPS.

THE *forceps* used in the practice of midwifery, is an instrument composed of two equal parts, each part consisting of a blade and handle, so formed that, when applied separately upon the head of a child obstructed in its passage through the *pelvis*, they may be connected

connected together, and used as two alternate or conjoined levers, for the purpose of extracting it.

Forceps have been made of wood or silver, but generally of iron properly tempered, with wooden handles, and when used, should be covered with smooth and thin leather, which without any significant increase of bulk, renders their introduction more easy, and takes off, both in appearance and reality, the asperity of the instrument. Each blade must be introduced separately, but in such directions, that when introduced they may be antagonists to each other; and there have been different contrivances or locks to keep them fixed together.

It would be difficult to determine the time when *forceps* were first used, but we have very early accounts of two kinds, with one of which it was intended to extract the child, without regard to the injury which might be done to it, and with the other to extract and preserve its life. The first was armed with teeth or sharp protuberances on the internal surface which grasped the head; but those of the second kind had no protuberances, and when used, were clothed with linen or some soft

soft material, to prevent their doing any injury to the child. The first are never used at the present time, and would have been forgotten, except for the patterns which are preserved in the collections of those who have taught the art. Of the latter kind there is an endless variety, but every variety regards one or other of these conditions; their length, their strength, or their different degrees, or kinds of curvature.

From the length of the *forceps* formerly made, we may conclude that it was usual to apply them before, or as soon as the head of the child had entered the superior aperture of the *pelvis*; and from their strength, that it was thought necessary to provide for the exertion of great force. The common curvature was varied according to the opinion entertained of the form and dimensions of the head of a child at the time of birth; but the lateral curvature was given for the accommodation of the instrument to the form of the *pelvis*, or for lessening the pressure upon, and of course the danger of lacerating, the external parts, while the child was extracting. As the *forceps*, though well applied, sometimes slipped from the head when brought into

7 action,

action, a groove, with a slight eminence on each side, was proposed to be made on that part of the internal surface which embraced the head, to prevent that accident, and to allow of a change in the manner of acting, by admitting of some degree of rotation.

Forceps have also been contrived in such a manner that one blade received the other, and these were called male and female. They have also been made with hinges or joints between the handle and the blade of each, answering no other purpose than that of concealing them, that there might be an opportunity of performing the operation with them in a clandestine manner. But as the reasons for using the *forceps* will justify the operation to the most severe examiner; and as these may be explained without adding to the terror or distress either of the patient or her friends, there never can be occasion for concealment, which, in these cases ought to raise a suspicion of the judgment or integrity of those who should attempt to practise it. There is, in truth, at the present time, more frequently a necessity for resisting the sollicitations both of patients and friends, urging us to the use of instruments, than of persuading them to comply with

with our proposals when we really think them needful.

Besides the different kinds of *forceps* which consist of two blades, others have been contrived with three. By those who supposed labours to be chiefly obstructed or rendered difficult by the inflection of the *os coccygis*, a third blade was added for the purpose of raising the head of the child over that part. But those who supposed difficulties to be occasioned by the *sacrum* jetting, and of course projecting the head of the child over the *symphysis* of the *ossa pubis*, added a third blade for the purpose of bringing back the head thus projected, into a right line with the cavity of the *pelvis*, before any attempt was made to extract it with the other two blades. Whatever credit may be due to the authors of these contrivances for their ingenuity, the third blade has certainly been added on erroneous principles; and *forceps* thus constructed, would not only be embarrassing in practice, but in every case, as far as can be judged, useless or injurious*.

* See *Chapman*.

It is remarkable that *forceps* were made of an unnecessary length, when we were forbid to apply them before the head of a child had descended very low into the *pelvis*; and they were made very strong, when it was well understood that far less force than they enabled us to use, could be exerted with propriety or safety. They were however by degrees made shorter and less cumbersome, and about the year 1748, Dr. *William Smellie*, who was eminent in practice, and as a teacher of midwifery in *London*, altered them, and brought into general usage a kind of *forceps*, more convenient than any before contrived. These before they are curved do not measure more than twelve inches from the end of the handle to the extremity of the blade; and, when properly curved, little more than eleven inches, of which the handle measures near five inches. The widest part of the blade measures about one inch and five eighths, and this gradually declines towards the handle, preserving at the same time the flatness of the blade till it meets the handle. Being simple in their construction, applicable without difficulty, and equal to the management of every case in which the *forceps* ought to be used, I have adapted

adapted the following rules to them. But if *forceps* of any other kind should be preferred, though the principles will hold good, the rules must be varied, according to the discretion of the person who may perform the operation.

SECTION IV.

GENERAL OBSERVATIONS.

It has been long established as a general rule in this country, that the use of instruments of any kind ought not to be allowed in the practice of midwifery from any motives of eligibility *. Whoever will give himself time to consider the possible mistakes and want of skill in younger practitioners, and the in-

* Non nisi summa necessitate illud exigente atque tum demum educendis ex utero infantibus admovenda esse ferramenta, quum nihil omnino spei reliquum est fore, ut solarum manuum subsidio extrahere ipsos liceat.—*Heister*. Capt. Liiij. ix.

stances of presumption in those who by experience have acquired dexterity, will be strongly impressed with a sense of the propriety of this rule, as well as from the general reason of the thing. But when, from any cause, the parent becomes unequal to the expulsion of the child, the assistance of art, by whatever means it can be afforded, is justifiable by necessity; because without such assistance the parent would die undelivered, and with her life, that of the child would also be inevitably lost. Yet it behoveth every person who may use instruments in the practice of midwifery, to be well convinced of this necessity before they are used, and to be extremely careful in their use; that he does not create new evils, or aggravate those which might be existing. But though it be our duty to avoid, if possible, the use even of those instruments which are intended to be employed without injury either to the mother or child, it would, on the other hand, be absurd to defer their use till the child were dead, and the mother reduced to a state, not of apprehended, but of real danger; or, which is worse, that if she should survive, her life would be rendered miserable from the
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consequences of mischief done before the instruments were used.

When it is proposed to deliver women with the *forceps*, the intention is, to supply, by their means, the total want, or deficiency of the natural pains of labour; in other words, to extract the head of a child which cannot be expelled by the efforts of the mother. But so long as these efforts continue with any degree of vigour, there is always reason to hope that they will ultimately accomplish the effect of expelling the child without any artificial assistance. We are moreover to recollect, that in labours of long continuance there will often be an abatement, or even a temporary cessation of the pains, without any apparent reason or alarming symptoms; but that cessation of the pains, which is the consequence of long continued, fruitless action, and of great debility, is to be considered as the only justification of the use of the *forceps*.

Before the completion of the first stage of a labour, that is, before the *os uteri* be completely dilated, and the membranes broken, the use of the *forceps* can never come under contemplation. Because the difficulties before occurring may depend upon causes which do not require their use; or, if required, they

could not be applied with safety or propriety before those changes were made.

There is infinitely greater difficulty in deciding upon the proper case and time when the *forceps* ought to be applied, than in applying or using them; but it is universally agreed, that the lower the head of the child has descended into the *pelvis*, the easier will their application be, and the operation with them more certain and successful. With a view to this observation, a practical rule has been formed, that the head of a child shall have rested for six hours, as low as the *perineum*, that is in a situation which would allow of their application, before the *forceps* are applied, though the pains should have ceased during that time. This, with other rules, was intended to prevent the rash or unnecessary use of the *forceps*, and certainly time is, in these cases, a very good corrector of practice.

The *forceps* ought to be applied over the ears of the child, because when thus placed, there is the least likelihood of doing injury to the child, and they enable us to act with the greatest advantage and safety to the mother. It must therefore be improper to attempt to
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apply them before an ear can be felt, either because the head is too high to allow us to reach that part, or because it is so closely locked in the *pelvis*, that there is not sufficient room to pass the finger for that purpose between the head of the child and the *pelvis*. If an ear of the child can be felt, the case is always manageable with the *forceps*; but when the question, whether they ought to be applied, comes under consideration, the ears are not turned to the sides of the *pelvis*, but that ear which is to guide us will be found towards the *pubes*. However we are always to remember that the *forceps* are not to be applied because we have the power of using them, but because the necessity of the case is such as to require their use. But cases sometimes occur in practice in which we may despair of the ability of the mother to expel the child; and which, though not such as have been stated as perfectly suitable for the use of the *forceps*, become suitable, merely by waiting a certain number of hours, and a repetition of the slight efforts of the parent. In that desponding state with which every tedious and difficult labour is accompanied, I have also found the patient very much encouraged

by having some distant time held up to her when she should be assisted, if the labour were not before concluded: as this encourages her, by giving to her imagination a period to her suffering.

Every change in the position of the head, and every alteration in the construction of the *forceps* from those already stated, will require some difference in the manner of applying and using them. But the preference, which ought in reason to be given, of one kind of *forceps* to another, is merely because one instrument may be more handy and convenient than another, for an intelligent and skilful man would be able to apply and use those of any form or size, in such a manner that they should answer his purpose; as an expert surgeon would be able to amputate a limb with a knife of any kind. No consideration or advantage to be gained by instruments of any particular structure ought to lessen our attention, as the success of every operation must necessarily depend upon the justness of the idea entertained of it in the mind of the person who may perform it, and the dexterity with which the instrument may be guided by his hands.

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When we have determined on using the *forceps* according to the preceding observations, corrected by our own judgment; and when we have represented our opinion, and explained the reasons for it to the friends of the patient, as is customary in all other operations, we must prepare for this in the following manner. The patient is to be placed upon her left side, across, and very near the edge of the bed on which she is laid, with her knees drawn up to the *abdomen*, and a pillow placed between them, that we may be able to reach the patient with all convenience, and possess the free and uninterrupted use of our own hands. The instruments, being warmed in water, and smeared with some unctuous application, are to be so placed that they can be readily taken hold of by ourselves, or handed to us by an assistant.

SECTION V.

ON THE APPLICATION OF THE FORCEPS.

THE first part of the operation consists in passing the fore-finger of the right hand between the *ossa pubis* and the head of the child to the ear; then taking the part of the *forceps* to be first introduced, by the handle, in the left hand, the point of the blade is to be slowly conducted between the head of the child and the finger, till the instrument touches the ear.

There can be no difficulty or hazard in carrying the instrument thus far, because it will be guided, and in some measure shielded, by the finger. But the farther introduction must be made with a slow semi-rotatory motion, keeping the point of the blade not rigidly, yet closely to the head of the child, by raising the handle towards the *pubes*. In this manner the blade must be carried gently along the head, till the lock reaches the
external

external parts near the anterior angle of the *pudendum*.

The point of the blade, while introducing, sometimes hitches upon the ear of the child, and then it requires a little elevation, which is given by depressing the handle. But when it has passed the ear, and is beyond the guidance of the finger, should there be any check to the introduction either of this or the other blade, it should be withdrawn a little, to give us an opportunity of discovering the cause of the obstacle, which we must never strive to overcome with violence, though we must proceed with firmness. When the first blade is properly introduced, it must be held steadily in its place, by pressing the handle towards the *pubes*, and it will be a guide in the introduction and application of the second blade.

Let the second blade be introduced in this manner. Keep the blade first introduced in its place, with the two lesser fingers of the left hand, and carry the fore-finger of the same hand between the *perinæum* and head of the child, as high as you can reach. Then take the second blade of the *forceps* by the handle, in the right hand, and, conveying the point between the finger placed within the *perinæum*,

perinæum, and the head of the child, conduct the instrument with the precautions before mentioned, so far that the lock shall touch the interior part of the *perinæum*, or even press it a little backwards. In order to fix the two blades thus introduced, that which was placed towards the *pubes* must be slowly withdrawn, and carried so far backwards, that it can be locked with the second blade retained in its first position: and care must be taken that nothing be entangled in the lock by passing the finger round it. When the *forceps* are locked, it will be found convenient to tie the handles together, with sufficient firmness to prevent them from sliding or changing their position, when they are not held in the hand, but not in such a manner as to increase the compression upon the head of the child.

Should the blades of the *forceps* be introduced so as not to be opposite to each other, they could not be locked; or if when applied the handles should come close together, or be at a great distance from each other, they would probably slip, or there would be a failure of some kind in the operation, as the bulk of the head would not be included, or they would be fixed on some improper part of
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the head; though allowance is to be made for the difference in the size of the heads of children. But if a case be proper for the *forceps*, if they be well applied, and we were to act slowly with them, there would not be much risk of failure or disappointment.

The difficulty of applying the *forceps* is most frequently occasioned by attempting to apply them too soon; or by passing them in a wrong direction; or by entangling the soft parts of the mother between the instrument and the head of the child, against all which accidents we are to be on our guard.

SECTION VI.

ON THE ACTION WITH THE FORCEPS WHEN
APPLIED.

It was before observed that the *forceps*, when applied, and fixed upon the head of a child, might be considered as a compound instrument which allowed of a separate action with either of the parts of which it was composed ; or of a conjunct action, as if the two parts formed one instrument. The separate action with either part will be on the principle of the lever ; but that with both the blades will be simple traction. Yet in practice we shall find very few cases in which it will not be necessary to exercise or to combine both these kinds of action.

As it is the intention, when the *forceps* are used, to supply with them the total want or insufficiency of the natural pains of labour, the whole power or force which the instrument enables us to use, ought not to be exerted in the first instance, but such a degree

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as any individual case may require; first trying a moderate degree of force, and increasing it slowly and deliberately, according to the exigence of each case. Because the impediment may not be great, and the point of obstruction may exist only at one part, and that being surmounted by one, or a few actions with the instrument, there would be no cause for acting any more. In some cases also, though the pains had entirely ceased, they will return with force sufficient to expel the child, from the irritation made by the mere application of the instrument. But when the *forceps* have been applied, they should not be removed before the head is expelled, though their assistance be not required, lest the pains should cease, and we should be again obliged to apply them.

The effects of the *forceps*, or the consequences which result from their action, are these; compression of the head, descent of the head, inclination of the face to the hollow of the *sacrum*, extraction of the head. As the descent of the head precedes the inclination of the face to the hollow of the *sacrum*, it would be improper to attempt to change the position of the head before it has descended,
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and it is afterwards unnecessary. Because if the action with the *forceps* be slow, and, according to the direction of the handles, the position of the head becomes altered in proportion to its descent, without any aim on the part of the operator, and without his guidance.

When the *forceps* are first locked, they are placed far backwards, with the lock close to, or just within the internal surface of the *perinæum*; and they can have no support backwards, except the little which is afforded by the soft parts. The first action with them should therefore be made by bringing the handles, grasped firmly in one or both hands to prevent the instrument from playing upon the head of the child, slowly, towards the *pubes*, till they come to a full rest. Having waited a short interval with them in that situation, the handles must be carried back in the same slow but steady manner to the *perinæum*, exerting, as they are carried in the different situations, a certain degree of extracting force; and after waiting another interval, they are again to be carried towards the *pubes*, according to the direction of the handles. Throughout the operation, especially the first part, the
action

action of that blade of the *forceps* originally applied towards the *pubes*, must be stronger and more extensive than the action with the other blade, this having no *fulcrum* to support it, and chiefly answering the purpose of regulating the action with the other blade. If there were any labour pains when the operation was begun, or should they come on in the course of it, the *forceps* should only be acted with during the continuance of the pains; the intention being not only to supply the want or insufficiency of the pains, but to follow them and imitate also the manner in which they return.

By a few repetitions of this alternate action and rest before described, we shall soon be sensible of the descent of the head; and it will be proper to examine very frequently, to know the progress made, that we may not use more force than needful, nor go on with more haste than may be expedient or safe. In every case we ought to proceed slowly and circumspectly, not forgetting that a small degree of force, continued for a long time, will in general be equivalent to a greater force hastily exerted, and with infinitely less detriment either to the mother or child. But after some

time, should we not perceive the head to descend, the force hitherto used must be gradually increased, till it be sufficient to overcome the obstacles to the delivery of the patient.

It was before observed, as the head of the child descended, that the face would be accordingly turned towards the hollow of the *sacrum*, without any aim or assistance on our part. Of course the position of the handles of the *forceps*, and the direction in which we ought to act with them should alter; for they becoming first more diagonal or oblique, with respect to the *pelvis*, and then more and more lateral, every change in their position will require a differently directed action, because the handles should ever be antagonists to each other. In proportion also to the descent of the head, the handles of the *forceps* should approach nearer to the *pubes*; so that in the beginning of the operation, though we acted in the direction of the cavity of the *pelvis*, towards the conclusion we should act in that of the *vagina*. When we feel that we have the command of the head by its being cleared of the *pelvis*, and the external parts begin to be distended, we ought to act yet more slowly, especially in the

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case of a first child, or there would be great danger of a laceration of the soft parts; and this can only be prevented by acting very deliberately, and in the direction of the *vagina*; by giving the parts time to distend; by duly supporting the *perinæum*, which is the part chiefly in danger, with the palm of the hand; by soothing and moderating the hurry and efforts of the patient; and, in some cases, by absolutely resisting for a certain time the passage of the head through the external parts. When the head of the child is born the *forceps* are to be removed, the delivery being completed as far as their assistance was required, and the remaining circumstances are to be managed as if the labour had been natural.

On the whole it appears that necessity alone, and not any sense of eligibility or expediency, will justify the use of the *forceps*; that when such necessity exists, their use is not only justifiable but highly advantageous; that with care they may be safely applied; that slowness and steadiness in our action with them will effectually secure both the parent and child against untoward accidents; but that no skill or knowledge can prevent mischief or disappointment,

ment, if the operation with them be performed with hurry or violence.

SECTION VII.

ON THE APPLICATION OF THE FORCEPS, UNDER VARIOUS CIRCUMSTANCES.

WE have before considered the manner of applying and using the *forceps*, when the head of the child presented in the most natural way, that is, with the face inclining towards the *sacrum*. But they may be equally necessary in other positions of the head, that especially which is in the next place most frequent, when the face is inclined towards the *pubes*. This position is discoverable by the readiness with which we can feel the greater fontanel in a common examination, by the direction of the ear, and often by feeling distinctly the features of the face tending towards the *symphysis*.

It was before observed, that this position of the head only constituted a variety of natural labours, as far as position was concerned in the definition. We are not therefore to be
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guided in our opinion of the propriety of using the *forceps* by any position of the head of the child, but by the necessity of any case, proved by the absolute inability of the mother to expel the child. Should such necessity exist with this position of the head, the *forceps* are to be applied, in the manner before described, over the ears of the child. But when they are applied we must act with them with the greatest caution; for, having a different and less perfect hold of the head, they are apt to slip, and, acting with less advantage, the operation, in this position of the head, must be more precarious. But if we succeed, when the head, thus situated, is brought so low as to distend the external parts, there will of course be greater danger of laceration, if we are ever so much upon our guard; because, in extracting the head, the chin of the child should be cleared of the *ossa pubis*, before the hind head is suffered to slide over the *perinæum*, which will very much increase the distention, and produce the same effect as if the arch of the *ossa pubis* was too small to receive the head of the child.

The same observations are also generally true when the face of the child presents; or

when, together with the head, there are one or both arms. For though in such cases there might be a necessity for, and a propriety in using the *forceps*, the operation with them would neither be so certain or easy as in the position of the head first stated.

In labours attended with convulsions, or dangerous hemorrhage; or when from any other urgent cause it may be necessary to hasten the delivery of the patient, to free her from immediate danger, should the *forceps* be used, the general rules will be sufficient to guide us, varying and suiting our conduct to the exigence of any particular case.

Lastly, when there are signs of imminent danger, however averse we may be to the use of instruments, we may be induced to try the *forceps*, though a case might not be altogether such as we might choose for their application; merely to take an indifferent chance of saving the life of a child, which must otherwise be inevitably lost. In such cases we must advert to the general principle, and make our attempts in a manner consistent with the safety of the parent; and, from motives of prudence, prepare the friends for that disappointment which it may not be in our power to prevent.

SECTION VIII.

ON THE VECTIS.

THE *vectis* used in the practice of midwifery is an instrument consisting of one blade, slightly curved, and a handle, somewhat larger, but similar in form to one of the blades of the *forceps*.

The true origin of this instrument, or time when it was first discovered, is not known; but before any accounts of the *vectis* were published, some difficult cases were recorded, in which women had been delivered with one blade of the *forceps*, which might then be well considered as a *vectis*, though not called by that name. But when only one blade of the *forceps* had been used, the operation was mentioned as something extraordinary, to shew perhaps the judgment or skill of the person who performed it, and not as leading to the use of a particular instrument, or to a rule of practice. It is probable that the instrument used by the *Chamberlens* in the last century

was the *vectis*; but this is conjecture, for, after much inquiry, I have not been able to discover that any of them left either a pattern or description of the instrument which they used. In the second volume of *Heister's Surgery* there is a delineation of a true *vectis*, recommended to him by *Palfyn*, a surgeon of eminence at *Ghent*; but neither this instrument nor its description engaged much attention, nor was the *vectis* generally known before the year 1750. For though it had been used before that time by *Rhonbuysen*, a surgeon at *Amsterdam*, after whose name it has been since called, it was reserved by him with great secrecy, to his own credit and advantage; and, after his death it became the property of his only daughter, from whom it was purchased by *De Bruyn*, an eminent surgeon of the same place. It appears that *De Bruyn* concealed the secret with as much caution as *Rhonbuysen*; or that he instructed students in the use of the *vectis* at a considerable price, and with an obligation not to divulge to others what he taught them. The names of other gentlemen who changed or improved the instrument soon became known; and, annexed to a paper written on this subject by the celebrated

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brated professor *Camper*, in the fifteenth volume of the Memoirs of the Royal Academy of Surgery, is a plate representing the *vectis* used by *Rhonbuysen*, *Boom*, and *Titling*.

The advantages arising from the use of the *vectis* in the hands of *De Bruyn*, ostentatiously urged, appearing to be very great, *Vischer* and *Vander Pol*, two physicians at *Amsterdam*, from motives of pure benevolence, purchased the secret from *De Bruyn*, in the year 1753, and immediately published a description of the instrument, with directions for using it; but none of the papers printed on this subject in the Dutch language have ever been translated into our own. While the *vectis* remained a secret, the reports of the benefits obtained by it were probably much exaggerated, especially those of *De Bruyn*, though *Van Swieten* says he was an honest man; but, when it was divulged, and the positive and comparative merits of the *vectis* strictly examined, it retained its credit and estimation, in the opinion of many competent judges, in different parts of Europe.

When the *vectis* was very much used, and highly esteemed at *Amsterdam*, as an invaluable improvement in the practice of midwifery, the

the *forceps* was the favourite instrument in this country, especially as altered by *Smellie*, who was then the principal teacher of the art in *London*. But the chief practice in this city was successively in the hands of *Dr. Bamber, Middleton, Nesbit, Cole, and Griffith*, some, if not all of whom, preferred the *vectis* to the *forceps*. To those gentlemen succeeded *Dr. John Watben*, a man of great ingenuity and most pleasing manners, who reduced the size of the *vectis*, and frequently used it with a dexterity that has astonished me. In the year 1757, that most excellent charity for delivering poor women at their own habitations was established, and *Dr. John Ford* was the first physician appointed to conduct it. On every occasion which required instruments of this kind, *Dr. Ford* used the *vectis*; and his coadjutors and successors, *Drs. Cooper, Cogan, Douglas, Sims, Dennison, Squire, and Croft*, with many others, have followed his example. From the deserved reputation of these gentlemen, who have at all times expressed their approbation of the *vectis* in preference to the *forceps*, many have been induced to try it, and the general opinion of its utility has increased. At the present time, all who are engaged in
the

the practice of midwifery would consider themselves as deficient, if they were not acquainted with the structure and manner of using the *veētis*; and some who, from education or habit, continue to use the *forceps*, are very willing to allow the equal, if not superior value of the *veētis*.

SECTION IX.

ON THE DIFFERENT KINDS OF VECTES.

THE first *veētis* of which we had any knowledge was that of *Palfyn* before mentioned. The instrument purchased by *Vischer* and *Vander Pol* was made public in a pamphlet written in the Dutch language. In the account given by *Camper*, there appears to be some difference in the form, length, manner, and degree of curvature of the *veētes* used by *De Bruyn*, *Boom*, and *Titsing*. But if the power of the instrument was preserved, and the general principle of using it followed, it is probable that all those who preferred the *veētis* thought themselves

themselves at liberty to alter its form or to vary its dimensions.

When the *veētis* was first known in this country, that described by *Heister* was preferred to those recommended by the surgeons at *Amsterdam*. The *veētis* used by Dr. *Cole* was like one blade of the *forceps*, somewhat lengthened and enlarged. That of Dr. *Griffith* was of the same kind, with a hinge between the handle and blade; and that of Dr. *Wathen* was like *Palfyn's*, but with a flat handle, and a hook at the extremity of the handle, which prevented its slipping through the hand, and might be occasionally used as a crotchet. Many other changes have been made in the construction of the instrument, but the *veētis* generally used is of the following dimensions:

The whole length of the instrument, before it is curved, is twelve inches and a half.

The length of the blade, before it is curved, is seven inches and a half.

The length of the blade, when curved, is six inches and a half.

The widest part of the blade is one inch and three quarters.

The

The weight of the *veētis* is six ounces and a half.

The handle is fixed in wood.

From this description any person acquainted with the *forceps* could find no difficulty in forming a just idea of the *veētis*, or an artist in making it. It appears also that a single blade of the *forceps* might, in many cases, be used not inconveniently, instead of any other *veētis*, and would generally answer the purpose without the trouble of introducing the second blade, as I have often experiencéd.

With respect to the part of the blade of the *veētis* which ought to be curved, and the degree of curvature, there has been some difference of opinion; but this must relate either to the ease of introducing, or the advantage of acting. With a small degree of curvature, diffused through the blade, the instrument may be most easily introduced, nor can the degree of curvature required, on any principle, be very great. But if, together with the power of the lever, we aim at acquiring much extracting force, the curvature should be somewhat increased; because the two centres, on which the force used would rest, would be at those parts of the head on which the instrument

ment might bear, and the part on which it would rest, whether the sides of the *pelvis* or the hand of the operator.

For rendering the introduction of the instrument more easy, and for preventing all the inconveniences which might arise from the difference of curvature, Dr. *Aitkin* of *Edinburgh* contrived a *vectis*, which he has fancifully called the *living lever*. When this is at rest it is quite straight; but while it is introducing, by turning a screw in the handle, the blade is jointed in such a manner as to bend gradually forwards as the instrument is advanced, so that the extremity of the blade is always kept close to the head of the child, of whatever dimensions that may be. There is infinite ingenuity in the contrivance; but of the effect in practice I cannot speak, having never tried this instrument. But a gentleman informed me that in a trial he made, the chain, on which the mechanism chiefly depends, broke, and he was obliged to finish the operation with a common *vectis*.

To lessen the pressure made by the instrument, when in action, upon the parts of the mother, on which it might bear, some person contrived two holes on a part of the blade,

near

near the handle, through which a strong ribband or tape was to be passed, which being afterwards tied and pulled firmly, when the instrument was acted with, was supposed to confine it firmly to the head of the child, and prevent or lessen the pressure which might otherwise be made upon the parts of the mother; but it appears that the same end may be answered better by the dexterous management of the instrument than by this contrivance.

SECTION X.

ON THE COMPARISON OF THE VECTIS WITH
THE FORCEPS.

THE general principle of practice, that the use of no instrument is to be allowed, except in cases of absolute necessity, ought not to be infringed, because we entertain a high opinion of any instrument, or because we may have acquired dexterity in using it. That principle, founded in common sense as well as medical

cal knowledge, and confirmed by daily experience, must be held inviolable. The real value of any instrument will be shewn by its efficacy to answer the purpose for which it may be used, and by the convenience with which it can be managed, when its use becomes absolutely necessary.

There has been much verbal dispute among those who vindicated the superiority of the *vectis* to the *forceps*, and those who maintained the long established credit of the *forceps* against the encroachments of the *vectis*: but the comparison between the two instruments has never been brought fairly to an issue, which might have been done by a discussion of the two following questions.

Is it possible to deliver a woman, safely, with the *forceps*, in any case not manageable with the *vectis*?

Is it possible to deliver a woman, safely, with the *vectis*, in any case not manageable with the *forceps*?

We may take it for granted, and I believe it is true, that in far the greater number of cases which occur in practice, either of these instruments may be used indiscriminately, with equal safety, advantage, and ease, allowing

ing for the dexterity which may have been acquired by the habit of using either instrument. But I do not recollect that those who have preferred the *forceps* have asserted that they could deliver a woman, in any case of difficulty not manageable with the *vectis*; and, as far as my experience enables me to judge, such a claim in favour of the *forceps* could not be supported. The debate on this point of the question has not turned upon the superior efficacy, but upon the greater safety and facility with which the *forceps* might be used; though one solitary case of very late occurrence, not candidly, not judiciously stated, hath been brought forward to prove the superiority of the *forceps* to the *vectis*. But I have not heard of any well authenticated instance, in which after being foiled with the *vectis*, any operator who had acquired a commonly dexterous use of that instrument, was able to succeed with the *forceps*; though it is worthy of notice, that those who are accustomed to the use of the *forceps* only, think themselves at liberty to depreciate the *vectis*, and those who do not use them, speak of the *forceps* in terms bordering on contempt.

With respect to the second question, we will take the facts and relinquish the argu-

ments, used by those who have preferred the *vectis* to the *forceps*; which I allow sometimes to have been extravagant, as is not unusual with those who are the introducers of novelties to public notice. If any confidence is to be placed in medical reports, it appears that many cases have occurred in which, after the introduction of the first blade of the *forceps*, it has been extremely difficult, or impossible, without the hazard of mischief, to introduce the second blade, and the operation has been performed with the single blade, used as a *vectis*. Of this I have known and been informed of several instances. It appears also, that before the head of the child has been so low down as was stated to be eligible for using the *forceps*, that the *vectis* has sometimes been readily applied, and effectually used, with safety both to the mother and child, when the necessity of some particular case required it. When the head of a child has not only been high up, but locked also in the *pelvis*, when there was not space sufficient to admit the two blades, or more force perhaps been required than the *forceps* enabled us to exert, and we should otherwise have been compelled to lessen the head, it has been feasible to apply the *vectis*, and the patient has been safely delivered,

ed, with a probable chance of preserving the life of the child; but of this I have not myself known any instance. Moreover, in all the deviations from that position of the head, which is most natural, as when it is turned with the face towards the *pubes*, or when the face presents, in which it is allowed that the *forceps* cannot be used with the utmost advantage or certainty; in all such cases, I know, the *vectis* may be applied and used both with safety and efficacy. From this statement it may be presumed, that the *vectis*, prudently used, is, in every case, an equally safe and efficacious instrument with the *forceps*, and a better adapted instrument in many cases which occur in practice. It is with this persuasion that several teachers of the art of midwifery in London, at the present time, never use the *forceps*, or speak of them in their lectures; while others, to whose judgment I owe much respect, continue to use the *forceps*, and think I have advanced more than experience will justify, in favour of the *vectis*. But these different opinions respecting the preference due to the *forceps* and *vectis* prove to my mind, that in the generality of cases, either instrument may in expert hands be used with equal safety and advantage. I may also be permitted farther

to observe, that I know several gentlemen of eminence, in the early part of their lives, accustomed to use the *forceps*, who discovering by accident or trial, that they were able to afford every assistance with a single blade, have abandoned the *forceps*, afterwards never using more than a single blade, or the *vectis*; but I never knew an example of any person who, having been accustomed to the *vectis*, relinquished its use and resorted to the *forceps*. The reader will observe, that in giving my opinion of these instruments, I do not speak of their abuse, but of their use on really necessary occasions; and will be assured that I consider disputes about the preference of instruments among the frivolous and most unworthy occupations of men of understanding.

SECTION XI.

ON THE MANNER OF USING THE VECTIS.

By the first accounts it appears that the *vectis* was recommended, not only in such cases as were thought fit and suitable for the *forceps*, but to supersede the necessity of lessening the head of the child; it was, in short,

short, asserted, that no other assistance could, in any case, be required, beyond that which we were enabled to give with the *vectis*. But if those accounts were allowed to be true, they would prove the miserable state of the principles and practice of midwifery at the time, and in the country in which they were written, in much stronger terms than they would describe the excellence of the instrument.

The general condition and circumstances of labours before stated, as requiring the use of the *forceps*, will hold good, and with equal propriety, when the *vectis* is intended to be used; and the rules already given for the *forceps* will shorten what we have occasion to say respecting the manner of using the *vectis*. For though this instrument might be used when the head of the child was high in the *pelvis*, or even when that was firmly locked in the *pelvis*, in cases of great emergency, success in the management of such cases depending upon much previous knowledge and experience with the instrument, I dare not attempt to form a precise rule for the extent of our conduct with the *vectis*. But when, without regard to the facility with which the *vec-*

tis may be introduced, or any other consideration except the necessity of the case, under the circumstances before stated, we have determined upon using this instrument, the patient being placed in the same situation, and every thing prepared as when the *forceps* are to be used, the operation is to be performed in the following manner :

Pass two fingers, or the forefinger of the right hand to the ear of the child, and introducing the *veētis* between the fingers and the head of the child, conduct it slowly forwards till the point of the *veētis* reaches the ear, wherever that may be. Then advancing the instrument as if it was a blade of the *forceps*, carry it on till, according to your judgment, the extremity of the blade may reach as far, or a very little beyond, the chin of the child ; when the line of the head, on which the instrument rests, will be in a straight direction from the *vertex*, over the ear, to the chin of the child ; and this is the most favourable position in which it can be placed. Then grasping the handle of the instrument firmly in the right hand, wait for the accession of a pain, during the continuance of which, raise the handle of the instrument gently but firmly towards

wards the *pubes*, at the same time exerting a small degree of extracting force. When the pain ceases let the instrument rest, and when it returns repeat the same kind of action; and every time of acting endeavour to lessen the pressure on the soft parts of the mother, with the two fingers, or the side of the palm of the left hand placed in such a manner as to form, in some sort, a cushion on which the instrument may play, or be supported. By a repetition of this action during the continuance of the pains, the head of the child will soon be perceived to descend, and the face to turn gradually towards the hollow of the *sacrum*. But should the very moderate force we have recommended be found insufficient to bring down the head of the child, that must be gradually and cautiously increased till it is sufficient to answer the purpose; and this may be done consistently with the safety both of the mother and child. When the *vertex* begins to fill and protrude the external parts, it is probable there may be no farther occasion to act with the instrument; or, if further action be required, it must be extremely gentle, taking all possible care, by turning the handle

towards the *ischia* or side of the *pelvis*, by supporting the *perinæum*, and by slow proceeding, to guard against a laceration of the parts.

During the operation, the *vectis* being confined to that part of the head where it was originally placed, must, as the head descends, necessarily change its relative situation to the mother, and be gradually turned from the *pubes* to the side of the *pelvis*, as was before remarked of the handles of the *forceps*.

It is also to be observed, though from the name of the *vectis* it might be supposed we had the power of acting with it as a *lever* only, that it will be found to possess a considerable degree of extracting force even when the curvature is but small ; and that we are able, at the time of using it, to direct with convenience, and in various ways, the head of the child as it descends.

In using the *vectis* some have directed us to apply it towards the hollow of the *sacrum*; but I have persuaded myself that the opinion which could lead to this practice was erroneous, that the instrument would then be worked with less efficacy, and there would be a greater hazard of doing mischief to the mother and child.

It

It may lastly be observed, that some gentlemen have, by frequent practice, acquired such wonderful dexterity in the use of the *vectis*, as to finish the operation of extracting the head of a child with one single stroke of the instrument. But as I only pretend to describe a method of using the instrument with safety and efficacy, I may be excused from commenting upon all that has been affectedly or ostentatiously advanced upon this subject.

CHAPTER XII.

SECTION I.

ON LESSENING THE HEAD OF THE CHILD.

HAVING finished all the observations we had to make on the use of those instruments which have been contrived to answer the first intention in practice, that of preserving the lives of both the mother and child, we come to consider an operation yet more important, though the necessity of performing it far less frequently occurs. In this operation, being convinced that under certain circumstances it is impossible that both their lives should be preserved, we feel ourselves justified in acting as if the child were already dead, as the only measure by which the life of the mother can be preserved.

This operation has ever been esteemed of the utmost consequence with regard to its principle and practice. The right or equity of
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of taking away one life for the preservation of another being doubted, the question was referred to divines, as the most competent judges of the case; and by them it was decided to be unlawful to take away one life, on any account, for the preservation of another*. The reference of the question may perhaps be considered as a proof that this operation had been performed too frequently, and the decision seemed actually to forbid it altogether; but, as far as the general determination could be supposed to relate to this operation, there was sophistry in the statement of the question, if not in the reply. For by the first it was presumed that the child was always living when this operation was to be performed, though that could seldom be the case; and by the latter it was allowed, that the authority of the decision might be suspended, if there was reason to believe that the child was already dead. It was for this cause that all the symptoms of a dead child, certain and equivocal, were collected and distinguished by authors with great assiduity and circumspection, because they

* *Peu*, in his *Pratique des Accouchements*, has preserved the forms of the decisions upon this subject by the Doctors of the Sorbonne,

were the authorities for, and justification of practice.

In cases of dangerous parturition the prerogative of deciding upon the life or death of the mother or child, was supposed by some to be inherent in the husband. This opinion is contrary to the rights and interests of society, and never could have satisfied the mind, or justified the conduct of any person who should have submitted to be governed by it. Nor do these cases admit of such election, for if the husband had preferred the child, his wish of preserving it at the expense of the life of the mother, could not have been gratified; he at least could be no competent judge of the necessity of the case, and could claim no peculiar dominion over the lives of either of them.

True religion and the common sense of mankind appear to have nothing contradictory. The doctrine they teach of its being our duty to do all the good in our power, and to avoid all the mischief we can, is applicable to the exigencies of every state, and we may be easily reconciled to it on the present occasion. In some cases of difficult parturition it is not possible that the lives both of the mother
and

and child should be preserved. Of the life or death of the mother we can, under all circumstances, be assured; of the life or death of the child there is often reason to doubt when we are called upon to decide and to act. The destruction of the mother would not, in the generality of cases, which may bring the operation of which we are speaking under contemplation, contribute to the preservation of the child; but the treatment of the child as if it were already dead, with as much certainty of success as is found in other operations, secures the life of the parent. It then becomes our duty, and is agreeable to our reason, to pursue that conduct which will give us the most probable chance of doing good; that is, of saving one life when two lives cannot possibly be preserved.

I forbear to inquire into the comparative value of the lives of an adult and a child unborn, because that does not seem to me to be the present question; and the subject has been in that view well considered*. Nor does it seem necessary to our purpose to discuss another question which has been lately agitated, whether a child unborn has any feeling, be-

* See Dr. Osborn's Essay on Laborious Parturition.

cause the fact of their having feeling may be clearly proved by any one who will observe the effect of irritating the soles of the feet of a living child when these present, or the palm of the hand when that presents, the body and head being yet retained in the *uterus*. But there is an argument to be drawn from the circumstances which sometimes occur in cases of laborious parturition, which applies with greater force towards justifying this operation in preference to any other, which might prove more hazardous to the mother, than any abstract reasoning. In all difficult labours, properly so called, especially such as are occasioned by disproportion between the head of the child and a small or distorted *pelvis*, one of the first effects of long-continued and strong pains, is the death of the child. The head of a dead child collapsing and admitting of pressure into a form more suitable to the dimensions of the *pelvis*, than a living one, will frequently be expelled through a space too small to allow that of a living child to pass. But after this change, which follows the death of the child, should the head remain too large, putrefaction advancing, the integuments of the head begin to decay, and the bones to loosen from each other.

other. By the continuance of the action of the *uterus* upon the child the integuments of the head at length burst, and the bones being separated, the brain of the child may be evacuated through the opening. The bulk of the head thus lessened may be excluded by the force of the pains, and the body, impaired by an equal degree of putrefaction, may readily follow, and the labour terminate without the assistance of art. All these changes may be, and sometimes have been gone through with perfect safety to the mother; so that the artificial opening of the head of a child is, in fact, no more than an imitation in one case of what happens spontaneously in another, and such imitation is the true ground on which the whole practice of surgery has been founded. It may also be observed that the resources of nature, in every thing which relates to parturition, are infinite and constantly exerted for the preservation of both the parent and child; yet when the two objects are incompatible, the life of the child is almost uniformly yielded to that of the parent.

From the number of signs of a dead child given by authors, and by the context of their writings, it appears to have been the practice, whenever

whenever the death of a child was ascertained, to use the means of extracting it; or to have given medicines to excite and aid the constitution for expelling it, without any reason drawn from the present state of the mother, but to prevent remote and suspected danger. This practice corresponded with the theory of the ancients, that a living child was born by its own efforts, but a dead child, being destitute of all power, must be excluded or extracted by art. But no fact is more clearly proved than that of a dead child remaining in the *uterus*, inoffensively, for several weeks before the accession of labour, and being then expelled in a manner perfectly natural. No injurious absorption takes place, nor does the *uterus* suffer by being in contact with it. The certainty of the death of the child would not therefore indicate the necessity of the operation we are considering*; but the reasons for, and justification of it, must be deduced from the state of the mother; and that state must be such as to prove her absolute

* Si sub ipsis partûs doloribus ac laboribus infans emoritur, nec tamen minus decenter, sed naturaliter compositus esse deprehenditur, non statim, quamdiu scilicet de morte non satis certi sumus, unci vel alia admovenda sunt instrumenta,

HEISTER, Cap. CLIII.

inability

inability to expel the child, and the impossibility of extracting it by any of those means which have been contrived for the purpose of delivering women, giving at the same time a chance for preserving the lives of children; together with the uselessness and danger of delay. But as the signs of a dead child, if decisive, would, on many occasions, have their influence on practice, and might at least induce the most cautious and prudent man to hasten the time of performing this operation, which he might otherwise defer; and as the knowledge of these signs will lead to a more full investigation of the subject, it is proper to enumerate them, and to inquire at the same time how far each of them may be allowed to determine the fact which they are adduced to prove.

SECTION II.

ON THE SIGNS OF A DEAD CHILD.

I. RECESSION OF THE MILK, AND FLACCIDITY OF THE BREASTS.

SHOULD the child die when a woman is far advanced in her pregnancy, and before the commencement of labour, these signs are seldom wanting. But if they were to be offered as proofs of the death of a child destroyed by the feverity of a labour, it would have been needful to have compared the state of the breasts at two specific times; first, on the accession of labour, when the child was living and they might be turgid; and, secondly, in the advanced state of labour, when the child was dead, and they might have become flaccid. But as it is not customary to inquire into the state of the breasts before some suspicion is entertained of the death of the child, and as those of no two women, under any circumstances, exactly resemble each other, all indications,

cations, taken from the state of the breasts, must be uncertain, and any judgment founded upon such indications, extremely liable to error.

2. COLDNESS OF THE ABDOMEN.

When children die towards the conclusion of pregnancy, women not unfrequently complain of coldness of the *abdomen*, and, at the instant of its death, there is usually one violent shivering. But when women in labour speak of this coldness, there is not actually external coldness, but a sense of it felt by the patient. A supposition that a dead child is colder than a living one, is the principle which gives to this sign its chief importance. But whether a child has been dead for a short or a long time, it is generally found to be of the same degree of heat with the *uterus* in which it was contained, and it is even hotter than the *uterus* while it is in the act of putrefying. The principle being fallacious, the inferences must often mislead, and a child is often born living, though the mother, before her delivery, complained of this coldness; which may be produced by some contingent circumstance, as the great heat of the room when she is in a

a profuse perspiration, or the sudden admission of cold air under the bed-clothes in winter. Little stress is to be placed on this sign alone, but when accompanied with others, it may increase our suspicions of the state of the child.

3. MECHANICAL WEIGHT OF THE UTERUS.

If a woman in labour, or in the latter end of pregnancy, should feel the *uterus* fall with a sense of increased or unresisted weight, when she turns from one side to the other or changes her position, it is often surmised that the child is dead; the bulk of the child being diminished, and all that resiliency observed to exist in every living body being lost. But this sense or effect may be explained in a more satisfactory manner from other causes, especially when a woman is in labour. Should the waters of the *ovum* be suddenly discharged, the *uterus* will contract till it comes into contact with the body of the child. But the integuments of the *abdomen*, not contracting with equal celerity, and the *uterus* wanting that support which they afforded when it was fully distended, must of course fall to whichever side the woman may turn. Should the
waters

waters be discharged slowly, or should the head of the child drop into the *pelvis* immediately after their discharge, there would not be this sense of unsupported weight whether the child were living or dead; because in one case the *uterus* would be held firm by the general contraction, and in the other, the child would be prevented from that kind of motion by its position.

When a child dies in the latter part of pregnancy the flaccidity and subsidence of the *abdomen* are considerable; but it is from a very great degree of these one is led to suspect either the death or wasting of the child, such subsidence being one of the natural changes which precede labours.

4. WANT OF MOTION OF THE CHILD.

The kind and degree of motion which may be caused by the child varies in different women, and at different periods of pregnancy. By some the child is scarcely ever perceived, and with others it is scarcely ever at rest, but it is often quiet a few days before, and in the time of labour. By the motion of the child

its living state is ascertained ; but the want of motion does not prove that it is dead, nor would it, for that reason, be justifiable to perform any operation which might be injurious to it, if living.

Some pregnant women have never been able to perceive the motion of the child through the whole time of pregnancy. Others have asserted that they have felt the motion of the child, though the event has proved that they were not pregnant. Others have not doubted of the life of the child, though, after its birth, there were certain marks of its having been long dead. In long and very severe labours natural affection may be overcome by present suffering and distress, and women might conceal their knowledge of the motion of the child from the hope of a more speedy delivery. Every allowance must be made and every consideration had for human nature, humbled by infirmities and misery. The fears and affection of friends will also warp their judgment ; but our greatest tenderness and the propriety of our conduct will be shewn, not by a compliance with requests and solicitations, but by following the dictates of our own reason

son and judgment, for we are not to be governed or alarmed by apprehensions of danger, but with its actual existence.

5. FOETOR IN THE APARTMENT OF THE PATIENT.

The putrefaction of the child would be an indubitable mark of its death, and might create a very offensive smell in the apartment in which the patient was confined; but every putrid child does not yield an offensive smell, and such smell may be occasioned by several other circumstances. If a child should die in the *uterus* from external injury, or any internal cause, and become putrid before the membranes of the *ovum* were broken, it would have a peculiarity of smell, but not that *fætor* which every animal substance emits, while it is in the act of putrefying under the influence of the open air. The *fætor* to which we now allude, can only appertain to a child which was living in the beginning of labour, and died in the course of it, after the discharge of the waters; and in such cases, when putrefaction does begin, it is commonly

very rapid in its progress. The general smell of putridity in the apartment of a person in labour, is to be admitted with very great caution as a sign of a dead child ; for if the room be small, or crowded with company, or kept hot and uncleanly, or the common offices of life are performed in it, as is usually the case among people of the lower class, a similar effect would be produced as when the child is dead and become putrid.

6. FOETOR AND ILL APPEARANCE OF THE DISCHARGES.

The *fætor* here meant is also supposed to arise from the putrefaction of the child, and the ill appearance to proceed from a mixture of *meconium*, sanious, or other matter which might be supposed to flow from a putrefying child, with the common uterine discharges. But the appearance of those discharges naturally varies in different women, according to their constitution, and to the qualities of the waters of the *ovum*. They become altered likewise by contingent circumstances, as the casual retention of the discharge, the mixture

ture of a small quantity of blood, or slight inflammation of the parts, which in some cases give a strong scent to them, hardly to be distinguished from putrid *fætor*. With every appearance of the uterine discharges, children have been born living and healthy; and when they have been long dead, those have in many instances been so little changed, as not to raise any suspicion in the minds of very experienced men. The proposal of any operation which would be injurious to the child, if living, would not therefore be justifiable, merely on account of the smell or appearance of the discharges, without other collateral proofs of its death.

7. EVACUATION OF THE MECONIUM, WHEN THE HEAD OF THE CHILD PRESENTS.

Should a child present with the breech or inferior extremities, the evacuation of the *meconium*, which is an absurd name given to the excrements of the child at the time of its birth, is one of the proofs of such presentation. But when the head presents, if the labour be very severe or tedious, the waters will be tinged of a greenish colour, or pure
meconium

meconium may be forced away, and, with such appearances, the child is often supposed to be dead; from a presumption, that if it was living, the *sphincter* of the *anus* would act with power sufficient to prevent any discharge. But by experience it is fully and frequently proved that a child may be born living, though the *meconium* should come away when the head presents, its evacuation proving no more than the weakness of the child, or the degree of compression it has undergone. The discharge of the *meconium* may also depend upon the quantity contained in the bowels, or some casual pressure upon the *abdomen* of the child. We may however, in general, conclude, when the *meconium* comes away in a natural presentation, that the state of the child is not void of danger; and for many years I never saw a child born living, when the *meconium* had come away more than seven hours before its birth. But at length, I met with a case, in which the *meconium* was discharged for more than thirty hours, at the end of which time, though the woman was delivered with the *forceps*, the child was born healthy and strong.

8. EDEMATOSE, EMPHYSEMATOSE, OR OTHER PECULIAR FEEL OF THE HEAD OF THE CHILD.

In many cases in surgery, information may be gained, and the judgment assisted by what is called the *tactus eruditus*, or that faculty which enables us to perceive and discriminate by the touch, with greater accuracy than by any evident or describable marks. It has also been said that we may decide in many doubtful cases, by the feel of the head, whether a child be living or dead. But as we know that in surgery, the most discerning and expert in this faculty are often mistaken, when they desert common evidences, so, opinions formed on such ground, would not authorize an operation to which they might be supposed to lead, in the question on which we are now speaking. For the integuments of the head of a child often become edematose to a considerable degree, from pressure in its passage through the *pelvis*; and sometimes emphysematose from a continuance or increase of the same pressure, when the child may, in all other respects, be perfectly well. If the integuments

are squeezed into a smooth, round form, that is said to be unfavourable; but when they are corrugated, the tumefaction, though equally great, is thought to be of less consequence; the former being supposed to prove the absolute separation of them from the *cranium*, and the latter, that their attachment remains. The original connexion of the bones of the head is such, as to allow of their being pressed close to, or over, each other with safety to the child; yet when this has been long dead, and their natural connexion destroyed, they may be perceived to be loose and distinct. The state of the bones is frequently such as to leave no doubt of the death of the child, as well as the abrasion of the cuticle or the falling off of the hair; but proofs of things self-evident are not wanted in practice, but such as will guide us in doubtful cases. Probably I have before observed, that whenever children die in the *uterus*, the greater the degree of putrefaction in which they are expelled, the more favourable is the indication to the mother; shewing, I suppose, that the health and vigour of her constitution in general, and of the *uterus* in particular, are not impaired. But if a child should remain dead in the *uterus*, for any

length of time, without becoming putrid, this circumstance might be considered as a proof that the powers of action in the mother were reduced to a state of dangerous weakness; as food remaining unchanged in the stomach would be a proof of the debility of that part.

Many signs of a dead child have been mentioned by authors, under the denomination of equivocal, as the livid paleness of the countenance of the mother, the offensive smell of her breath, and several others. But if it appears that those signs which have been called certain are in fact doubtful, it will follow, that very little reliance ought to be placed in those which are acknowledged to be equivocal. If, however, the propriety of performing this operation ought not to be decided by the certain knowledge of the death of the child, but by the circumstances of the mother absolutely requiring it for her preservation; then, the consideration of the life or death of the child becomes of less importance. Because if the operation, when really necessary for her safety, were not to be performed, the life of the child would not be preserved, and that of the parent would be inevitably lost.

SECTION III.

ON THE CAUSES OF THE DEATH OF THE CHILD.

THE death of a child in the *uterus* may be occasioned by various causes independent of the mother, as by local inflammation or other disease of some part essentially necessary to its life; by some original imperfection in its structure which may prevent its acquiring more than a certain size, or existing beyond a certain time; by the smallness or morbid state of the *placenta*, hindering the proper communication between the child and the *uterus*; by a partial or total separation of the *placenta*; or, by the rupture of some of the large vessels which run upon its surface: by the vessels of the *funis umbilicalis* becoming impervious; by the circulation through them being obstructed by the casual tying of a knot; by untoward pressure of the body of the child upon the *funis*; or by this becoming dropfical or otherwise diseased.

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The child may also be destroyed by affections or diseases of the mother, as by the sudden and violent impression of fear, joy, or other tumultuous passion; by the irregularity of the parent's life; by fever; by improper or unwholesome diet; by any cause capable of depriving the child of a proper quantity of nutriment, or depraving the quality of that with which it may be supplied; or by accidents which produce some positive injury upon the body of the child, through the integuments and parts with which it is invested and naturally defended. Some of these are beyond the power of art to prevent or remedy, though others might by proper care and management be obviated or relieved; but at present we want only to discover those causes, of the death of a child, which may occur in the time of labour.

To the inconveniencies and danger which may arise in the course of a labour from the disproportion between the size of the head of a child and the dimensions of the *pelvis*, we must submit; as no judgment or skill can do more than teach us to wait patiently for the effect to be derived from the efforts of the mother, and the accommodating construction
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of the head of the child. And, though the degree of compression which this may undergo in a very tedious or difficult labour might be judged inconsistent with the safety of children, they will often be born healthy and vigorous, and the parents recover more speedily and perfectly, after such labours, than after those which were natural and short. The same observation will also hold good of the resistance made by the soft parts to the passage of the child through the *pelvis*, unless their rigidity should proceed from local inflammation. But should the natural efforts be interrupted or subdued by fever, debility, or any other adventitious cause, or should there be local disease, the state of the patient would require the assistance of medicine or of art, according to the circumstances which might supervene. Yet it is in common observation, that far the greater number of those labours which have been considered as difficult, and which really were such towards the conclusion, were not in fact occasioned by the absolute state of the patient, but by interposition, and the desire of accelerating labours, which in their nature required a certain time for their completion. This interposition has chiefly consisted of two points of

of practice, both extremely reprehensible; the artificial dilatation of the *os uteri*, and the premature rupture of the membranes. By such practice the order of the labour becomes disarranged, and there often follow occasions to exercise art, for the relief of those evils which were originally caused by the improper use of art, to the great hazard of the parent or child. So long therefore as labours proceed naturally, they may be proper objects of our reason and judgment, but cannot be considered as the objects of art. But when they are proved to be beyond the efforts of nature to accomplish, the assistance of art becomes justifiable because it is necessary, and we may be reconciled to the fate of the child, if the life of the mother cannot possibly be preserved by any means consistent with its safety.

SECTION IV.

ON THE INSTRUMENTS USED IN THIS
OPERATION.

THE instruments with which this operation was anciently performed, do not appear to have been well calculated to answer the intention of the operator, effectually or safely. They consisted chiefly of hooks, differing in form and length, which were fixed upon any part of the head with the view of extracting it forcibly. It being sometimes found impracticable to fix a hook firmly upon the head, other instruments were invented and used to make an opening in which a hook might be fixed, but without any intention of lessening the head. All these instruments it would be useless and tiresome even to enumerate; but it is remarkable that *Mauriceau*, a man of great experience and ability in his profession, should complain of difficulties in this operation which he could not surmount, from the want of proper instruments.

Perhaps

Perhaps there is no operation in surgery which admits of a more precise distinction, than this of lessening the head. It consists of three parts; perforating the cranium; evacuating the brain and *cerebellum*; extracting the head; and three instruments were commonly used for these purposes. The first was the scissars used by *La Motte*, altered and improved by *Smellie*; the second was in the form of a large spoon with ferrated edges; the third was a hook or crotchet, straight or curved, to be used singly, or in pairs like the *forceps*.

Many years ago, *Savigny* the instrument maker, at my request, prepared two instruments which I supposed to be fully sufficient for this operation, the evacuation of the brain not requiring a separate instrument. The first was a *perforator* in the form of *Smellie's* scissars, the blade being slightly curved in the manner of the scissars used for extirpating the tonsils, but without any cutting edge, which is somewhat dangerous and altogether useless; the second was a crotchet with a little degree of curvature and a very small hook. The *perforator* measures about nine

inches in length, and has a stop on each blade one inch and a quarter from the point. The crotchet, which has a wooden handle and a flat stem, should, when properly curved, be of an equal length with the *perforator*. These instruments, which are now almost in general use, are found to be very convenient and fully adequate to every purpose in the performance of this operation ; and as the intention is well understood, and the instruments simplified, both the difficulty and danger of the operation are infinitely lessened.

SECTION V.

ON THE MANNER OF PERFORMING THE OPERATION.

Much consideration is required before we determine to perform this operation ; but when we have decided upon the necessity of its being done, besides great circumspection in the manner of doing it, there is occasion for
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our being resolute and persevering in our attempts to accomplish it; even when the difficulties to be surmounted appear to be too great for any degree of skill, or any force we have the power of using. One common error formerly prevailed in this and many other operations, founded on an opinion, that it was needful to perform it speedily; but it is now proved by experience, and generally acknowledged, that the more calmly and slowly we proceed, the less chance there will be of failing or doing mischief. As the sole aim of this operation is to preserve the life of the mother, without regard to the child, whatever its state might be, it will be our duty to be extremely careful to guard against every accident which might prove injurious or hazardous to the mother. But, as by following the distinctions specified in the last section we shall be able to mark and explain all the circumstances of the operation as they occur, we will abide by those distinctions in describing the manner of performing it.

SECTION VI.

ON THE PERFORATION OF THE HEAD.

THE ease or difficulty attending this and every other part of the operation, will depend upon the distance the head may be from us; whether, for instance, it be descended and locked in the *pelvis*, or be lying at the superior aperture; and upon the degree of distortion of the *pelvis*, which may be only so much as just to prevent the passage of the head, or so great as to render the use of the instruments both troublesome and dangerous. Some inconvenience may also be produced by the *os uteri*, should it not be completely dilated; but this may rather be esteemed a reason for extraordinary care than as a cause of difficulty.

Without regard to the part of the head which we mean to perforate, but deciding upon that which is most obvious and easy of access, as the most proper, the left hand flattened is
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to be introduced into the *vagina*, and the fore finger of the same hand is to be directed upon that part of the head where we mean to fix the point of the instrument. The *perforator*, held in the right hand, is to be conducted with the convex part towards the palm of the left hand, and with the point kept close to the fore finger, till it reaches the part we mean to perforate. The fore finger of the left hand is then to be passed round the point of the instrument, that we may be assured none of the soft parts of the mother are in the way of being hurt. With the instrument held firmly in the right hand, we must then press through the integuments of the head; and, the point being fixed upon the bones of the *cranium*, begin to perforate, by turning with a semirotatory motion the handle of the instrument. This motion of the instrument, care being taken to confine the point to the place where it was originally fixed, is to be continued till we judge the bone to be actually perforated; and we are to try occasionally, by advancing the instrument, whether the bone be perforated or not. When the bone is perforated, the instrument being pressed forwards will penetrate the head, and go on till it reaches

the stops formed upon the blades. Then, fixing the finger and thumb of the right hand in the bows of the handle, or pressing the thick part of the hand between the stems, or calling for the help of an assistant, we should separate the handles of the instrument to such a distance as to make a slit or opening of sufficient length in the *cranium*; judging of, and in some measure guiding, the effect produced upon the blades by the separation of the handles, by the finger of the left hand retained in its primitive position. Then, closing the handles, the instrument must be turned in a transverse direction, and they are again to be separated in the same cautious manner, by which means a crucial opening of a proper size will be made in the *cranium*. The *perforator* is then to be closed and withdrawn in the manner it was introduced.

In this part of the operation the principal things which demand our attention are, first, that the instrument be carefully introduced; secondly, that we be not alarmed at the discharge which follows the perforation of the integuments of the head, as that is to be expected; thirdly, that the point of the instrument

ment does not slip while we are perforating ; and fourthly, that the opening in the *cranium* be sufficiently large.

SECTION VII.

ON THE EVACUATION OF THE CONTENTS OF THE HEAD.

A VERY large opening of the *cranium* has been generally considered as necessary for the well performance of this operation ; but this is not absolutely required in any point of view, nor can it always be made with safety. It must, however, be sufficient for the purpose of suffering the contents of the head to pass through it ; and for the evacuation of these, it was before mentioned, that various instruments had been contrived. But these, especially the ferrated spoon, appear to be unnecessary and dangerous ; unnecessary, because the texture of the brain and *cerebellum* being broken

broken down, their evacuation will follow of course, as the head is propelled or extracted; dangerous, because an instrument with many sharp points could not be frequently introduced and withdrawn without the hazard of being caught on the soft parts of the mother. Any smooth instrument of a proper size and length, such as the handle of a silver spoon, or a blade of the *forceps*, will answer the purpose of breaking down and evacuating the contents of the head safely and effectually. But I have generally introduced the crotchet into the opening in the *cranium*; and, turning it round frequently, in various directions, especially near the basis of the scull, have completed this part of the operation without difficulty. With all the care which can be taken, it is not always possible to do this on the first trial; but, if in the course of the operation it should be found that any part of the contents of the head had escaped the action of the instrument, the same method may at any time be repeated, without delaying the operation.

SECTION VIII.

ON THE EXTRACTION OF THE HEAD.

IT was formerly a rule of practice, whenever the head of the child was opened, that the efforts to extract it should immediately commence, and be continued till the purpose was accomplished. With all the cautions which have been given for ascertaining the necessity of the operation before it was performed, it was strongly inculcated, that we should be on our guard not to defer it till the strength of the patient was too much exhausted; because by such delay we should altogether lose the advantage that might result from the natural efforts; and, when the child was extracted, the mother would remain in a state of the greatest danger from mere debility, more especially if there should be a loss of much blood, before, or after the exclusion of the *placenta*. Our conduct with regard to the extraction of the head must then depend upon the state of the

3 patient;

patient; whether that state will permit us to wait for the advantages to be derived from the putrefaction and compression of the head from the natural pains, or whether the head should be speedily extracted by art. If, from the great distortion of the *pelvis*, it should have been found necessary to lessen the head in the beginning, or early part of labour, the head when lessened may be left for many hours to undergo those changes which putrefaction occasions, to the diminution of its bulk by compression, to its gradual descent into the *pelvis*, when it may be readily extracted, or to the chance of its final expulsion without assistance, as the reason and nature of the case may indicate or require. Under such circumstances the late Dr. *Christopher Kelly* * informed me, and I believe the practice

* The papers of my worthy friend Dr. *Kelly* are in the hands of my son-in-law Mr. *Croft*, who found among them the following account of the individual case, probably, of which the Doctor had informed me.

“ March 11, 1763. — has a *pelvis* extremely narrow, and, by the measure I took, do firmly believe the distance between the *os pubis* and projection of the *sacrum* is not more than two inches, therefore I knew it was in vain to hope to bring the child alive by any means whatever : therefore, for
her

practice originated with him, that he had left the head of a child, after the evacuation of its contents, for more than twenty-four hours, without making any artificial attempts to extract it; and that the operation was, by this delay, rendered more safe, and infinitely more easy. The late Dr. *Mackenzie* also informed me, that he had in the latter part of his life followed this practice with success. But the matter has been more fully discussed, with great ingenuity, and as much precision as the question admits, by a late writer*, who, in a case of which I was a witness, left the head of a child more than thirty-six hours after it had been lessened, and then extracted

her safely, I opened the head freely, and emptied the *craanium*, in about sixteen hours after being first called to her, and then left it to settle into the *pelvis* twenty-four hours (as in the case of Mr. *Ford's* patient) before I delivered her, which I did with tolerable ease, by means of the blunt hook only. She recovered as well as possible. This was her first child. She was so ricketty when a child, as not to be able to walk till nine years of age, and is now very short. Her name is ———."

The *pelvis* of this woman came at length into my hands, and in some parts of the superior aperture does not measure more than one inch and a quarter. D.

* *Essay on Laborious Parturition*, by W. Osborn, M. D.

it; the woman recovering without any untoward symptom. When the head of the child has been lessened, the length of time during which the patient may therefore be trusted in expectation of favourable changes, must be left to the judgment that may be formed of every individual case which may be the object of practice. In some cases, from the precarious state of the mother, there will exist a necessity of extracting the head as speedily as we can with safety; yet the general principle to be established is, that the longer we do wait, the more easily will the head be extracted. But the patient is to be carefully watched that we do not wait too long, lest unfavourable symptoms should come on, and the end for which the operation was performed be defeated.

Sooner or later then, according to the state of the mother, it will be necessary that we should begin to make our efforts to extract the head of the child; and taking care, in the first place, to remove cautiously any loosened or sharp pieces of bone, I have been accustomed to avoid using the crotchet, or any kind of instrument, till I have tried what advantage was to be gained with my fingers. With this view, introducing the fore finger of my right hand,

hand, armed with my glove, or some such contrivance, into the opening in the head, and then bending it in the shape of a hook, I have pulled with all the force it enabled me to exert, repeating my attempts at intervals when the natural efforts of the mother returned.

Should the head of the child be so high in, or above, the superior aperture of the *pelvis*, or this be so much distorted as not to admit of my giving this kind of assistance, or should it be unequal to the purpose, I carefully introduce the crotchet, guided by my left hand, into the opening in the head; and, fixing the point of the hook as far from the edge of the bone as it will allow, I begin to pull moderately by the handle held in my right hand, guarding at the same time the hook of the crotchet with the fingers of the left, if it should happen to tear away the bone.

If on trial the crotchet be found firmly fixed, but the head be too much impacted in the *pelvis* to be brought down with the force first used; that is, supposing the force required to extract the head be equal to 10, and the force exerted by the crotchet not to exceed 5; no other purpose can be answered by striving too earnestly with the force which cannot be made
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to exceed 5, except tearing away the piece of bone in which the crotchet may be fixed, which does not facilitate the operation. We are to be satisfied with the steady exertion of the force 5, which, being continued, will at length be found sufficient for our purpose, the resistance gradually diminishing, and the force 5 remaining. In the repetition of our attempts to extract the head, which must be made at intervals, should the bone in which the instrument was fixed be loosened and come away, wholly or in part, the crotchet must be again introduced and fixed in another place, and the same method of proceeding followed; remembering also when we extract, to pull with some variation in the direction, but always in the line of the cavity of the *pelvis*. In almost every case of difficulty the principal obstacle or cause of the difficulty is at one particular part of the *pelvis*, and when the head has passed that part there is no farther occasion for using force. We are afterwards to proceed very circumspectly, that there may be no laceration of, or injury done to, the parts of the mother, internal or external. The principle I wish to impress on the minds of those who may be embarrassed with difficulties of this kind

kind is, that time is equivalent to force, and that no advantage will be obtained by pulling away small pieces of bone, except such as were loose and likely to injure the soft parts of the mother, or by acting hastily or violently. On the contrary, when the instrument is once firmly fixed in a part of a bone which affords a good hold, I have been cautious not to tear it away by pulling rashly, considering that as something like breaking the instrument with which I was performing the operation.

In a case of very great difficulty it is however possible that all the bones of the *cranium* might be brought away successively, and nothing of the head remain but the basis of the scull, with the integuments. In such case it has happened oddly enough, that I have succeeded in bringing down the remainder of the head, merely by grasping the integuments firmly in a mass, or even in distinct parts, and pulling by them in a proper direction. But, if these should be found insufficient, the crotchet is to be introduced again, and fixed upon the basis of the scull on any part where we can get a firm hold, and this assuming a more convenient direction will be readily brought down. I have not found, in cases of

this kind, that I have acted from a preference for fixing the instrument in this or that part, or in this or that manner ; but, giving myself time to reflect, the exigence of the case has dictated what I ought to do, so that I am not solicitous about any particular method. Some have thought that it was of great importance to fix the crotchet on the outside of the head, and others have insisted on the propriety and superior advantage of fixing it on the inside ; but I am persuaded that such things are of little consequence, and that in the course of a difficult operation it may be found necessary and useful to fix it in either way.

When the disproportion between the cavity of the *pelvis* and the head of the child is very great, it is possible that all the bones of the cranium, together with the basis of the scull, may be brought away, yet the body of the child may remain above the superior aperture of the *pelvis*. This circumstance may require different methods of treatment. If the space between the projecting bones of the *pelvis* would allow the flattened hand to be passed into the *uterus*, it might be most expedient to turn the child and deliver by the feet, which, thus situated, I have more than once done.

But,

But, if the distortion of the *pelvis* will not allow the hand to pass into the *uterus*, or if there be reason to apprehend mischief to the *uterus*, from the jagged or loosened pieces of bone, the crotchet must be again introduced, and fixed upon the chest of the child, where it may probably meet with some part that will bear a sufficient degree of force for extracting it. Should this not be the case, the crotchet must be repeatedly tried, by which the contents of the *thorax* and *abdomen* may be evacuated, and the general bulk of the child's body very much lessened. Then, trying to fix the hook of the instrument on some part of the spine, or bringing down the arms, we shall at length succeed and extract the body of the child, whole or in parts, though we may have been frequently baffled. In an operation difficult as that now described, disagreeable as it may appear, and really is, having only occasion to attend to the extraction of the child, in any manner, without doing mischief to the mother, the mind of the operator may be at ease, and he will then avail himself of every advantage which will offer towards answering his purpose. On the whole, I have never known a case attended

with so much difficulty that it could not be surmounted by steady and slow proceeding ; and the operator, after all his difficulties, if he has acted cautiously, may be repaid by seeing his patient recover, as well, or better than after the most easy labour.

SECTION IX.

ON THE SUBSEQUENT TREATMENT.

WHEN a child has been extracted in the manner before described the *placenta* will commonly be expelled in a natural way ; but should any difficulty arise, that must be managed according to the rules which will be given in the chapter on Hemorrhages.

Women in general recover well after this operation, provided it was not delayed till some irreparable injury was done to the parts of the mother, and was performed with care. Besides the treatment which may be proper for all women in childbed, it will be incumbent

bent upon us to be particularly careful in these cases that the urine be voided ; and, if the patient should not be able to do it by her own efforts, that it be drawn off with the catheter, within a short time after her delivery. The use of the catheter is also to be continued twice in the course of twenty-four hours, till she may become able to expel the urine ; lest there should be inflammation, on any part of the bladder or *meatus urinarius*, and a slough be cast off, which would be followed by an involuntary discharge of urine ever afterwards ; which I consider as one of the most deplorable accidents in the practice of midwifery.

SECTION X.

ON THE PROPRIETY OF BRINGING ON PREMATURE LABOUR, AND THE ADVANTAGES TO BE DERIVED FROM IT.

WE have before alluded to this operation as a method of preserving the lives of children,

dren, without adding to the danger of women ; if in any case the *pelvis* were so much distorted, or so small, as absolutely to prevent the passage of the head of a full grown child, and yet not so far reduced in its dimensions as to prevent the head of a child of a much less size from passing through it. Melancholy are the reflections when a woman has a very much distorted *pelvis*, (and such women have usually a wonderful aptitude to conceive) that there should be none, or very little chance of preserving the lives of her children ; and yet, in the course of practice, I have in several instances been called to the same woman, in five or six successive labours, merely to give a sanction to an operation by which the children were to be destroyed. It is to the credit of the profession that every method by which the lives of parents and children might be preserved, has been devised and tried ; and, though frequent occasions for using some of these methods cannot possibly occur in any one person's practice, it is right that all should be acquainted with what has been proposed and done in every case, with or without success.

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The first account of this method of bringing on premature labour was given to me by Dr. *C. Kelly*. He informed me, that about the year 1756, there was a consultation of the most eminent men in *London* at that time, to consider of the moral rectitude of, and advantages which might be expected from, the practice, which met with their general approbation. The first case in which it was deemed necessary and proper fell under the care of the late Dr. *Macaulay*, and it terminated successfully *. Dr. *Kelly* informed me, that he himself had practised it, and, among other instances, mentioned that the operation had been performed three times upon the same woman, and twice the children had been born living. The thing has often been the subject of conversation, and proposed by writers, but some have doubted the morality of the practice; and the circumstances which may render the operation needful and proper have not been stated with any degree of precision.

* The patient was the wife of a linen-draper in the *Strand*.

With regard to the morality of the practice, the principle being commendable (that of making an attempt to preserve the life of a child which must otherwise be lost), and nothing being done in the operation which can be injurious to the mother, I apprehend, if there be a reasonable prospect of success, no argument can be adduced against it which will not apply with equal force against inoculation, against medicine in general, and, in fact, against the interposition of human reason and faculties in all the affairs of life. Such an argument would lead us back to the absurd doctrine of predestination, if, with justifiable intentions, and without producing any present evil, we may not use our endeavours to extricate our fellow-creatures from evils which threaten them, or under which they may be actually oppressed.

If the morality be justified, we are next to consider the safety and utility of the practice.

As to its safety, having reasoned upon the structure of the parts concerned in the operation, and having carefully attended to all the circumstances which have occurred when it
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had been performed in eight cases in which I have either performed it, or it has been done by my advice and persuasion, I have not known one untoward or hazardous accident that could be imputed to it. I therefore feel authorized to say, as far as my reason or experience enables me to judge, that the operation of bringing on premature labour is perfectly safe to the person on whom it may be performed.

But respecting the utility of the operation, the statement first made of the intention or purpose with which it may be done, that is, to try whether the head of a small child will not pass through a *pelvis* too much narrowed in its dimensions to allow one of a common size to pass; will shew that the objects of the operation are circumscribed within certain limits. Should the cavity of the *pelvis* be of its natural size this operation is out of the question, and never can be required on that account. If the cavity of the *pelvis*, though reduced in its dimensions, would permit the head of a child to be squeezed through it by the force of strong and long continued pains, this operation is not required, and ought not to be performed. If the *pelvis* be so far
reduced

reduced in its dimensions as not to allow the head of a child of such a size as to give hope of its living, to pass through it, the operation cannot be attended with success. It is in those cases only in which there is a reduction of the dimensions of the *pelvis* to a certain degree, and not beyond that degree, that this operation ought to be proposed or can succeed.

It would be highly satisfactory to state with precision the exact dimensions of the cavity of the *pelvis* of the person on whom it might be needful to perform this operation, and on whom it might be performed with success. But, as all the instruments contrived for measuring the *pelvis* in the living woman, too imperfectly answer this purpose to enable us by them to form a guide of practice, and as the head of a child before it is born can never be accurately measured, the determination must be left to opinion; and those who are experienced will not commit any great mistake in their conjectures. Under circumstances and in situations just preventing the successful use of the *veſtis* or *forceps*, and just compelling us to the fatal measure of lessening the head of the child, it may become a duty to propose, on a future occasion, the bringing on premature labour;

labour; at seven months, or any later time, according to our sense of the disproportion between the head of a child and the cavity of any particular *pelvis*. It can hardly be doubted but that the casual events of practice first inspired the notion of this method in the mind of some person who, adverting to the fortunate termination of premature labours coming on spontaneously, in cases of distortion of the *pelvis*, endeavoured to imitate by art what not unfrequently happens naturally.

There is another situation in which I have proposed, and tried with success, the method of bringing on premature labour. Some women, who readily conceive, proceed regularly in their pregnancy till they approach the full period, when, without any apparently adequate cause, they are in the habit of being seized with a rigor, and the child instantly dies; though it may not be expelled for some weeks afterwards. In two cases of this kind I have proposed to bring on premature labour, when I was certain the child was living, and have succeeded in preserving the children without hazard to the mothers. There is always something of doubt in these cases, whether the child might not have been preserved

served without the operation ; but, as such cases often come under consideration, and as I am disclosing all that my experience has taught me, it seemed necessary to mention this circumstance.

I may be allowed to conclude this subject without entering into a detail of the manner in which premature labour may be brought on ; because no person qualified to decide on the propriety of this operation can be ignorant of the manner of performing it. I must however observe, when the membranes of the *ovum* are punctured or ruptured, and the water discharged, that the time when the action of the *uterus* may come on will be very different ; this happening in some instances in twelve hours, and in others not for twelve or fifteen days. During this interval we have only to wait patiently for the event, and when the pains come on, the labour, if natural, is to be suffered to proceed without interruption ; or, if irregular, such assistance is to be given as the peculiarity of the case may require.

SECTION XI.

ON THE SECTION OF THE SYMPHYSIS OF THE
OSSA PUBIS.

IT was before observed that an opinion of the gradual and spontaneous separation of the *symphysis* of the *ossa pubis* previously to the commencement of labour had generally prevailed*; though some had denied both the fact itself, and the advantages that would accrue from the separation if it were actually made. With a strong persuasion or conviction however of those advantages at the time of parturition, some rude attempts were formerly made to promote or increase the separation beyond its common degree; but the practice, probably never frequent, had for very many years fallen into total disuse. Latterly this idea has been resumed, and among others, *Camper*, a celebrated anatomist and professor at *Amsterdam*, in order to try the effect of the separation and discover its consequences, had, in

* See Vol. I. Chap. 1. Sect. 3.

animals,

animals, divided the *symphysis* without much apparent injury. But in the year 17 M. *Sigault*, a surgeon at *Paris*, first performed this operation on the human subject, in the time of labour, the patient recovering, and the life of the child being preserved. Some credit might have been due to M. *Sigault* for the spirit of enterprize which suggested the operation, and for his resolution in performing it ; but the applause given to him by many of the faculty at *Paris* (though, if I mistake not, the Royal Academy refused to give any testimony of their approbation) and by the nation at large, was beyond all measure extravagant ; a medal was struck to perpetuate the fact, and there could scarcely have been greater exultation had he invented a method by which the whole human race should in future have been freed from the pains and dangers of parturition. The influence of vanity was at least as strongly marked in these proceedings as the dictates of humanity, and the steps that were taken to aggrandize the merits of the operation, then supported only by a single fact, and of the Surgeon who performed it, were too hasty and too enthusiastic, not to raise a suspicion of error or deceit in
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the estimate of the operation, or in the account given of it. But the conduct of the French extended its influence on the Continent, where the operation was several times performed with various success.

Immediately after the accounts of the operation were brought into this country, wishing, as a matter of duty, to understand the ground of the subject, I had a conference with the late Mr. *John Hunter*, in which we considered its first principle, its safety; and after the most serious consideration it was agreed, that if the utility could be proved, there appeared from the structure of the parts, or from the injury they were likely to sustain by the mere section of the *symphysis*, no sufficient objection against performing it. Of its real utility it was however impossible to decide, before many experiments had been made on the dead body, to ascertain the degree of enlargement of the capacity of the *pelvis* which could be thereby obtained. Such experiments were soon made, and their result published by the late Dr. *William Hunter*, and these proved on the whole, that in extreme degrees of distortion of the *pelvis*, the advantage to be gained was wholly insufficient to allow the

head of a child to pass without lessening its bulk, and in small degrees of distortion, that operation was unnecessary, such cases admitting of relief by less desperate methods. They proved moreover that irreparable injury would be done in attempts to increase the common advantages gained by the section of the *symphysis*, by straining or tearing asunder the ligaments which connect the *ossa innominata* to the *sacrum*, and to the soft parts contained in the *pelvis*, particularly to the bladder. For the reasons advanced by Dr. *Hunter*, the operation was never (excepting in one unhappy case) performed in this country, and so perfectly were the minds of men satisfied of its impropriety and insufficiency, that I do not believe the section of the *symphysis* ever came into contemplation in any one case of difficult parturition, with any of the gentlemen who practise midwifery in this city. But as accounts of the operation were frequently brought from the Continent, and as active measures were pursued for supporting the celebrity with which it had been first brought into notice, Dr. *William Osborn* examined all the cases then published, stated with precision the little advantages gained, the

the injuries occasioned, and the general result of the operation, and proved both by facts and arguments, the cruelty and futility of it, in an essay written professedly on the subject.

Here the matter might for ever have rested, but in writing on the practice of midwifery, as well as any other art, it seems necessary to record not only what has been proposed and done with success, but the trials that have been made of things proposed, though unsuccessful; otherwise there might be at different times a repetition of the same trials and of the same misfortunes. Perfectly convinced though I am of the impropriety of this operation, and hoping that no attempts will ever be again made to bring it into general practice, it seemed necessary to give this short account of it, and I cannot refrain from making the following observations.

It is proved in the first place, that some enlargement of the capacity of the *pelvis* is actually obtained by dividing the *symphysis* of the *ossa pubis*.

Secondly, That the evils which have followed this operation, have been very much occasioned by endeavours to increase that en-

largement of the capacity of the *pelvis*, beyond the degree which naturally follows the division of the *symphysis*.

Thirdly, That many women who have undergone this operation have recovered, though of those who recovered, many suffered very serious complaints for a long time, or for the remainder of their lives.

Fourthly, That some children were born living when this operation was performed.

We may therefore presume to say, that if a case could be so precisely marked, that there should only be a deficiency of just so much space as would be supplied by the simple division of the *symphysis*, the operation might in that particular case be considered.

We may also say, that this operation is not so certainly fatal to those women on whom it may be performed, as the Cæsarean operation ; nor so certainly destructive of children as that of lessening the head.

We may then be allowed to suppose a case, and such a one is more than possible, in which a person of very high rank, the life of whose child might be of the greatest public importance, could not be delivered without the destruction of the child, or her child be preserved

served but by the Cesarean operation at the expence of her life; and that she through human frailty might refuse to submit to the Cesarean operation, and the policy of the nation might forbid the destruction of the child. Of course both the mother and child would be inevitably lost. Should such a case occur, which, as I said before, is more than possible, then the section of the *symphysis* of the *ossa pubis* might be proposed and performed, as it would in some measure meet both their interests, being less horrid to the woman than the Cesarean operation, and instead of adding to the danger, give some chance of preserving the life of the child.

But, from the statement of this case, or any thing before advanced, I hope it will not be concluded that I mean to insinuate a wish, or to advance an argument, in favour of this operation, in the cases for which it was originally proposed.

CHAPTER XII.

SECTION I.

ON THE CESAREAN OPERATION.

THIS operation is to be performed by making an incision first through the integuments of the *abdomen*, and then into the *uterus*, for the purpose of extracting a child therein contained. In cases of extra-uterine children, an incision, for the purpose of extracting a child contained in the cavity of the *abdomen*, under various circumstances, has been called the *Cesarean* operation; but in the importance and consequence of these two operations there is an evident and very great difference.

It has been supposed by some writers that a name was given to this operation from a circumstance common to it and every other in surgery in which a knife was used*; by others, that it had its name from the extraordinary courage of the person on whom, or by whom,

* *A cæso matris utero.*

it was performed: but it was more generally explained by the imagined qualities and rank of the persons whose lives are said to have been preserved by it. These, and their descendants, according to *Pliny*, were called *Cæsars*, as those born with the feet foremost were called *Agrippæ*; or when there were twins, and only one was born living, *Vopisci*. It was not thought respectful that men who in the course of their lives proved extraordinary should have been presumed even to come into the world in a common way*. But it is well known that the name of *Cæsar* was not conferred on that great man or the family who bore it, from the manner of his birth, but was derived from quite another source. Nor do any of the ancient writers in medicine take notice of this operation, and we cannot suspect they were so negligent as to have omitted the description of it, or so ignorant as to be un-

* *Auspiciatus, eneclia parente, gignuntur, sicut Scipio Africanus prior natus, primusque Cæsarum a cæso matris utero dictus.*

PLIN. *Histor. Nat. lib. vii. cap. ix.*

The mother of *Cæsar*, according to *Suetonius*, was living at the time of her son's expedition to *Britain*,

acquainted with it, when, in all probability, had it been performed, they would have been the very persons consulted and employed to perform it.

Pliny *, who lived in the time of *Vespasian*, is the first author who mentions this operation; but he speaks of it with reference to those who lived before his time, and his account does not give much satisfaction. *Rouffet* †, who was a strong advocate for the operation, wrote professedly on the subject in the year 1581. But the records of this operation have been imperfectly preserved even in modern times. For, from the context of the cases recorded, it appears that

* *Plin. loco citato.*

† *Bauhin*, in the appendix to *Rouffet*, dated 1588, gives the following case: *Eliz. Aleispachen* had this operation performed upon her by her husband, who was a Gelder of Cattle at *Siergenhausen* in *Germany*, in the beginning of the sixteenth century. She had several children born afterwards in the natural way.

Parè and *Guillemeau* wrote against the operation.

M. Simon wrote two papers on the subject in the first volume of the memoirs of the *Royal Academy*.

Heister and many others have written on the subject; but *Weideman* of *Dussendorp*, in his *Thesis*, has given an account of all the cases of this operation that were extant, and the event of them.

some have been misrepresented; that some are fictitious, and were alleged to answer other purposes, as was the supposed one of lady *Jane Seymour*, to stamp the character of greater cruelty on *Henry the Eighth*; and that others are related with a change of circumstances, so as to appear different, though they were in fact the same. From a detestation of the apparent cruelty of this operation, from a doubt of its necessity or propriety, from the destructive event which was to be expected, or from some other cause, it was never performed in this country till within these few years. But at present we have well authenticated accounts of nine cases in which the operation has been performed, under the direction of, and by, men of unexceptionable abilities; and these may be esteemed sufficient to enable us to form a judgment of the advantages to be derived from the operation, as well as of the manner in which it ought to be performed.

SECTION II.

By the first writers on this subject many circumstances are recited which were supposed to render this operation necessary, some respecting the parent, others the child. Of the first kind were the smallness or distortion of the *pelvis*, the straightness or closure of the natural passages, from *cicatrices* or adhesion, the rigidity of the parts from old age, or their imperfection from youth; almost every cause of a difficult labour, when extreme in its degree, has been mentioned as a possible reason for this operation. Those which respected the child, not only related to its comparative size, but its position also; and on this occasion twins, and even monsters, which there was no wish to preserve, have been mentioned. But, whatever was the existing cause, it appears that there must have been a full conviction on the mind of the person who proposed this operation, of the impossibility of delivering the patient by any other means.

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Some writers have indeed spoken of this operation, not with a view to its absolute necessity, but its eligibility, or as deserving preference to other methods of delivery which might be practicable. Such writers have not met with general approbation, but their influence has been too great; for in the histories of the cases recorded, we find in several of them some circumstance which proves that the operation was not necessary, or that the grounds on which it ought to be performed were not well understood. The ideal glory of the operation has perhaps had its influence in *France*, and some other parts of the *Continent*. I am not willing to accept any other principle but necessity as a justification of this operation; that is, whenever it is proposed, there shall be no other way or method, by which the life, either of the mother or child, can possibly be preserved; and the impossibility shall be confirmed, not by the opinion of one, but as many competent judges as can be procured. I should then consider this operation justified by every principle of religion, and the laws of civil society, by as decisive and satisfactory evidence as any other operation, which we never hesitate to propose, or to perform.

SECTION III.

THREE general situations have been stated in which it has been presumed the Cesarean operation might be necessary.

1. When the parent was dead, and the child living.
2. When the child was dead, and the parent living.
3. When both the parent and child were living.

With respect to the first situation, when the parent is dead, and the child living, there cannot be any debate; because, without giving pain, or incurring any one inconvenience, an attempt is made by this operation to preserve the life of a child, which, if it be not performed, must soon and inevitably perish.

With respect to the second situation, as, in every case in which the operation has been performed in this country, the parent has died, but the lives of many of the children have been preserved, the operation holds forth, as its principal if not sole advantage, the hope
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of preserving the life of the child; the chance of preserving the parent being much lessened by an operation so full of danger. It will therefore, I think, be generally acknowledged, that the operation ought not to be performed upon a living mother, when there is proof, or good reason for believing, that the child is dead.

The third is the statement attended with any difficulty, and being the only case which, strictly speaking, constitutes the Cesarean operation, it might lead to a comparative estimation between the life of the child and that of the parent. But the common sense of mankind agreeing in the general principles adopted and pursued throughout this work, of its ever being our duty, in the first place, to preserve the lives of both the parent and child; in the second, to preserve the life of the parent; and in the third, that of the child, which have been on various occasions inculcated and applied, will point out the general line of conduct we ought to follow according to the exigence of every case which may occur in practice.

Without regard to the state of the child, this operation has also been proposed for our
consider-

consideration under circumstances which relate to the mother alone.

1. When she was living.

2. When she was dead.

Some have been of opinion, that this operation ought never to be performed on the living subject. Perhaps impressed with the dread of the operation, they did not distinguish between necessity and eligibility, and therefore wished to abolish it altogether. But if it were to be performed only when the patient was dead, more particularly if we were to wait for her death, as the only proper time of performing it, it would in general be fruitless. For I do not find any instance of a living child extracted by this operation after the death of the mother, unless the child escaped by the same stroke as that which proved fatal to the mother, of which the accounts seem to be almost fabulous, or merely accidental. But as, in cases of women dying in convulsions, rupture of the *uterus*, or other rapid diseases, at different periods of pregnancy, or of a labour, it is possible for a living child to be extracted after the death of the mother, by speedily performing this operation; and as no harm can possibly result from the operation, supposing

supposing ourselves disappointed, no reasonable objections can be made to our performing it under such circumstances. In some countries the laws forbid a woman dying, when pregnant, to be interred before the child shall have been taken away. A prohibition to bury the living with the dead is the spirit of such laws.

SECTION IV.

If it be admitted that necessity alone can justify the Cæsarean operation, we are next to enquire into the causes and proofs of such necessity.

Many of the causes which have been specified by writers, as producing a necessity of performing this operation, are certainly unequal to so great an effect. The size of a child, however large, unless the *pelvis* be at the same time very much distorted; nor any untoward position of the child; nor twins; nor monsters; nor the closing or straitness of the soft parts, can ever compel us to the necessity of performing this operation; because we know, from reason and experience, that difficulties arising from such causes must admit of relief by less desperate means. It may be asserted
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in general terms, that there is only one cause which can justify our proposing or performing this operation on the living subject, and that is, such an extreme degree of distortion of the *pelvis* as renders the extraction of the child, in its present state, when diminished in its bulk, or even reduced into small pieces, absolutely impracticable. It is true, if any other cause could be proved to exist which produced the same impracticability, then the operation would be equally requisite and justifiable.

To make a precise statement of that degree of distortion or consequent diminution of the cavity of the *pelvis*, which might require this operation, is not perhaps possible in the living subject. The natural space of the cavity of a well formed *pelvis*, from the *os pubis* to the *sacrum*, is about four inches and a half, and in some subjects rather more; and the head of the children at the time of birth bear a general relative proportion to this space. But living children have been born, frequently by the natural efforts, when the space was presumed to be less than four inches; and, if the children were small, when it did not exceed three inches: and we may judge that the head of a child is capable of being reduced by compression one third of its natural bulk,

bulk, without destruction of its parts, or any permanent injury. But should the capacity of the *pelvis* be reduced under three inches, we have not much reason to expect a living child to pass through it, either naturally, or by the assistance of art; though the head of one that is dead, especially if it be putrefied, may be pressed through a *pelvis* of about those dimensions, even without artificial assistance. Should the capacity of a *pelvis* not exceed, according to our judgment, two inches and a half, then the head of a child, unless the contents be evacuated, could not pass or be extracted through it. But if the cavity be so far closed, that it should not exceed one inch, of which examples have sometimes occurred, we might then presume that the head of a child, though reduced to the least possible size, could not be extracted through it; and the necessity and propriety of the Cæsarean operation might be admitted, if we had reason to conclude that the child was living.

These general positions every person engaged in practice will bear in his mind, in cases of difficulty arising from distortion of the *pelvis*. But he must also recollect, that the remaining space of the cavity of the *pelvis*, in cases

cases of distortion, will be differently estimated by different persons, and cannot be ascertained with precision by any one, during the life of the patient. He will also remember, that the kinds of distortion are as various as the degrees, and that the cavity, though much diminished in one part, may be far less altered in another; and that even one side of the *pelvis* may measure two inches, when the other is scarcely equal to one, which consideration may make a change in our judgment of the kind of operation required widely different. It should also be remembered that the size of children at the time of birth, and the firmness of the bones, together with the compactness of their union with each other, are very different, and might add to, or lessen, the difficulty of a birth, whether natural or artificial. After a mature consideration of the whole matter, I am however of opinion, that no rule of sufficient authority to guide us in any particular case can be formed from such calculations, and that our conduct is not to be governed wholly by them; but by the reflections of common sense working in a reasonable mind, stored with the knowledge of such calculations, and of many other

collateral circumstances, which it is impossible to enumerate or describe, so as to render them applicable and useful.

I cannot however relinquish the subject without mentioning another statement of this question, which has often employed my mind, especially when the subject has been actually passing before me. Suppose, for instance, a woman married, who was so unfortunately framed, that she could not have a living child. The first time of her being in labour, no reasonable person could hesitate to afford relief at the expence of her child; even a second and a third trial might be justifiable to ascertain the fact of the impossibility. But it might be doubted in morals, whether children should be begotten under such circumstances, or whether, after a determination that she cannot bear a living child, a woman be entitled to have a *number* of children destroyed for the purpose of saving her life; or whether, after many trials, she ought not to submit to the Cæsarean operation, as the means of preserving the child at the risk of her own life. This thing ought to be considered. Moreover, when it has been ascertained, that women could not possibly bear living children,

and one great end of marriage has been frustrated, some have determined on a voluntary separation from their husbands, from a sense of the moral turpitude of conceiving children without the chance of bringing them living into the world. But the law of the land has afforded no remedy for the case, though, as this fact admits of unquestionable proof, it would not be difficult to form terms of separation between a husband and wife thus circumstanced, so cautiously that they should not be abused, yet without the imputation of criminality to either party; and many evils might be thereby prevented.

SECTION V.

IN every case in which the Cesarean operation has been performed in this country the patients have died. It may be of use to enquire, whether their death was occasioned by any disease with which they were afflicted before the time of labour; or was the consequence

quence of the state to which they were reduced from the occurrences of labour, before the operation was performed; or was the inevitable consequence of the operation. In cases of death occasioned by wounds, the following order in which the danger is produced may be observed: first, from convulsions, or hemorrhage; secondly, from inflammation; thirdly, from gangrene; fourthly, from excessive or long continued suppuration. Though all the patients on whom this operation has been performed died, their death happened at different periods; but not one died, either while the operation was performing, or immediately after it. No convulsions were brought on by the incisions, nor does it appear that any of them sunk through the loss of blood accompanying or succeeding the operation. Some died within twelve, others at the end of twenty-four hours, and a few died on the third day after the operation. If we may judge of the cause of the patient's death by the time of her dying, it might be said, that the death of those who failed within twenty-four hours, was probably owing, not to the operation alone, but to the violence of this, combined with that of previous disease; but

when they survived twenty-four or forty-eight hours, then their death might be attributed to the succeeding inflammation, in a body before predisposed to disease. If we had the liberty of selecting a patient on whom to try the merits of this operation, we certainly should not choose one who was either very much distorted, or who had the *mollities ossium*, or who had been several days in labour; because the event must very much depend upon her state at the time when the operation was performed.

It is not my intention by this kind of investigation to lessen the general aversion from this operation when it can be avoided; but I believe we cannot fall into error by conforming to such conclusions as these. Every woman for whom the Cæsarean operation can be proposed to be performed will probably die, and should any one survive, her recovery might rather be considered as an escape than as a recovery to be expected. But as such an escape may happen in any case, in which the operation might be performed, we may and ought to esteem every case which can come before us, as the individual case in which a happy event is to be expected. These conclusions will lead

us to the principle of necessity as the sole justification of this operation, and inspire us, when we do perform it, with every motive to exert all our judgment and skill for the service of the patient, as if we were certain she would survive.

SECTION VI.

HAVING never performed the Cæsarean operation, nor seen it performed, I offer the description of the case related in the fourth volume of the *Medical Observations and Inquiries*, as the best example which has been recorded. The operation was performed by Mr. Thomson, one of the surgeons of the *London Hospital**.

“ A table being prepared, the patient was placed upon it, lying on her back, her head

* It is remarkable that the oldest physician or surgeon in *London*, could not recollect a case of this operation, or had heard it spoken of by their predecessors; yet that two cases, in the same street, should have occurred to one gentleman, within a very short space of time.

being supported by pillows, and her legs hanging down. The belly appeared prominent chiefly on the right side, the protuberance of the *uterus* extending but about two or three fingers breadth on the left of the *linea alba*. There was no difficulty therefore to determine where the incision was to be made.

“Accordingly, about a hand’s breadth from the navel on the right side, I began the incision in a longitudinal direction, and continued it about six inches in length, the middle of which was nearly opposite to the navel; the skin and adipose membrane being cut through on the outer edge of the *rectus* muscle. I carefully made an incision through the tendinous expansion of the abdominal muscles and the *peritonæum*, sufficient to introduce the forefinger of my left hand, when, with a curved knife conducted on my finger, an opening was made into the cavity of the *abdomen*, and the *uterus* exposed.

“The *uterus* appearing very solid to the touch, it was apprehended by some gentlemen, that the *placenta* might perhaps adhere to that part of the *uterus* which lay bare, and which might considerably obstruct the removal of the child, or endanger an hemorrhage.

rhage. With precaution, therefore, an aperture was made in the centre of the *uterus* sufficient to admit my finger, with which conducting the curved knife, I dilated the wound in the *uterus*, upwards and downwards, to the full extent of the outward wound.

“ The *placenta*, which actually adhered to this part of the *uterus*, easily gave way, and receded as my finger advanced in making the opening.

“ The *placenta* and membranes immediately began to protrude. Dr *Ford* at this juncture slipping his hand into the *uterus*, while the sides were kept asunder, brought forth the child by the feet, and immediately afterwards the *placenta* and membranes were extracted with the greatest ease. Dr. *Ford* took upon himself the management of the child and separation of the umbilical chord, and in a few minutes the child cried strongly.

“ The *uterus* being disburthened of its contents, and contracting amazingly fast, the *omentum* and bowels began to protrude; Mr. *John Hunter* was so obliging as to assist me in retaining them within the belly, whilst I cleansed away the grumous blood (which was small

in quantity) and made the *gastroraphy* or suture of the belly.

“ I made four futures at nearly equal distances from each other, and about one inch and half from the edge of the lips of the wound.

“ The ligatures being double, pieces of linen spread with common plaister, and rolled up in the form of bolsters, or compresses, were applied between them, after the manner of the quilled future, and the wound was thereby brought into and retained in close contact; and lint and a common pledget being applied, finished the operation.” This woman died about five hours after the operation.

CLASS THIRD.

PRETERNATURAL LABOURS.

CHAPTER XIII.

SECTION I.

THE technical terms which are used to specify all the other classes of labours, relate to some circumstance in which the mother is wholly or partly concerned. But the term *preternatural* applies merely to the position of the child; and this kind of labour may occur in a woman in perfect health, when all the changes incidental to the state of parturition are made in the most favourable manner, and in whom there is the best possible formation. In short, there may be no deviation or irregularity of any kind, excepting only that the
head

head of the child does not present. Should the presentation of another part be combined with an hemorrhage, or any other circumstance of importance, either to the mother or child, the title of *preternatural* is generally lost, and the labour is referred to some other class.

The presentation of children at the time of birth may be of three kinds: first, with the head; secondly, with the breech, or inferior extremities; thirdly, with the shoulder, or superior extremities. With the first of these the labour is called natural; but with the two latter preternatural. Preternatural labours have been subdivided, by systematic writers, into a much greater number and variety; but as all distinctions are to be made and regarded according to their utility in practice, and as no possible advantage can be derived from their multiplication, but on the contrary much confusion, it will be found expedient to abide by these distinctions only. For though there may be a difference in one respect or other in every labour, and of course a necessity for some change in our conduct, yet notice cannot possibly be taken of every alteration; and these distinctions will be found

found sufficient for all the general purposes of practice.

Great pains have been taken to discover the causes of the preternatural presentation of children, and with the best intention; that of pointing out the errors and irregularities by which they were supposed to be produced. On this part of our subject, though there have been many different opinions, I think it has been generally presumed, that preternatural presentations happen more frequently to women in the lower ranks of life, than to those in more affluent condition; the accidents and exertions, to which the former are more liable, being considered as the causes. Before we consent to the inference, it would however be necessary to examine into the truth of the assertion. I believe it has never been satisfactorily proved that preternatural presentations are really more common in the lower than in the higher ranks of life; the number of the former being, almost beyond any comparison, greater than of the latter. No station of life is exempt from these presentations, though they rarely occur in any, especially those of the second order; and it is wonderful, that those women who have had
such

such accidents, at different periods of utero-gestation, as would be deemed most likely to produce them, have not had them. But though preternatural presentations seldom occur, when they are dreaded and expected, it is remarkable that some women are peculiarly subject to them; not once only, which might be considered as the effect of some accident, but exactly to the same presentation, whether of the superior or inferior extremities, in several successive or alternate labours. It seems doubtful therefore whether we ought not to exclude accidents as the common causes of these presentations, and search for the real cause from some more intricate circumstance; such as the manner after which the *ovum* may pass out of the *ovarium* into the *uterus*; some peculiarity in the form of the cavity of the *uterus* or *abdomen*; in the quantity of the waters of the *ovum* at some certain time of pregnancy; or perhaps in the insertion of the *funis* into the *abdomen* of the child, which is not in all cases confined to one precise part, but admits of considerable variety.

SECTION II.

ON THE SIGNS OF PRETERNATURAL PRESENTATIONS.

SEVERAL presumptive signs of the preternatural presentation of children have been mentioned ; such as an unequal distention of the *abdomen* during pregnancy ; some peculiarity in the motion of the child ; the sudden rising of the child, when the woman is in a recumbent position, so as to affect her stomach, or to incommode her breathing ; the slow progress of the first stage of a labour ; the early rupture of the membranes ; or the elongated form which the membranes containing the waters assume, while the *os uteri* is dilating. But these symptoms and appearances will be found very uncertain ; nor can we confide in any mark or indication, until we are able to feel and distinguish the part which really presents. It will often be in our power, before the membranes are broken, to

discover that the presentation of the child is preternatural; and sometimes, though not constantly, to say what the presenting part is. But when the membranes are broken, a small share of skill and circumspection will enable us to determine what that part is; especially if we have accustomed ourselves to handle the limbs of new-born children. By its roundness and firmness, the head may be distinguished from any other part; the breech may be known by the cleft between the buttocks, by the parts of generation, and by the discharge of the *meconium*, though the last circumstance does not happen even when the breech presents, till the labour is far advanced, and sometimes occurs likewise in presentations of the head. The foot may be known by the heel and the want of a thumb; and the hand by its flatness, by the thumb and the length of the fingers. In some cases I have found the hands and the feet lying together; but this cannot create much embarrassment to an intelligent practitioner; though there is reason to believe that an error or mistake in judging a superior to be an inferior extremity, has sometimes been productive of mischief. I do not mention the marks by which the

back,

back, belly, or sides might be distinguished, because these, properly speaking, never constitute the presenting part; that is, though they may sometimes be felt, they never advance foremost into the *pelvis*.

SECTION III.

ON THE MANAGEMENT OF THE FIRST ORDER OF PRETERNATURAL LABOURS.

IN the first order of preternatural labours may be included, the presentation of the breech, of a hip, of the knees, and of one or both legs.

When a labour is so far advanced that the *os uteri* is fully dilated, if no part of the child can be felt, it will be prudent to watch carefully when the membranes do break, as there is a chance that the presentation may be of such a kind as may require the child to be immediately turned. But if no part of the child

child can be felt, by a common examination, after the membranes are broken, it will be justifiable to ascertain the presentation by the introduction of the hand. Should the head, or inferior extremities, be found to present, the hand may be withdrawn, and we may suffer the labour to proceed without any further interference; but if it should be that kind of presentation which requires the child to be turned, we shall have an opportunity of performing the operation, before there is any natural contraction of the *uterus*.

In the first order of preternatural labours, two very different methods of practice have been recommended. By the favourers of the first method, we have been directed, as soon as the presentation was discovered, whatever might be the state of the labour, to dilate the parts, then to pass the hand into the *uterus*, and to bring down the feet of the child. Or if these were originally in the *vagina*, to grasp them and extract the child with all possible expedition, making the labour wholly artificial, without waiting for the efforts of the constitution. Would it not argue a want of humanity, say they, to leave the woman for many hours, perhaps a whole day, or even a longer

longer time, in pain and anxiety, when we have the power of extracting the child in a very short space of time, by which the violence of the pain would be lessened, or its duration; at least, very much shortened? Others, on the contrary; have considered this practice as founded on a vulgar and most pernicious error, which makes no distinction between the slowness and the danger of a labour; and these have considered the presentation of the breech and inferior extremities as generally safe, and have taught us that such cases ought, and with security may be left to the efforts of the constitution, no kind of assistance being required; in the first stage of the labour, the mother certainly not suffering more than in a presentation of the head. Of the superior advantage of these two methods, it is only possible to judge by the general event of cases of this kind; and if this should prove, which I believe is scarcely to be doubted, that less injury is done to the mother, and that there is a better chance of saving the life of the child, by suffering it to be expelled, than by artificial delivery, there can be no hesitation to which of the methods preference should be given; for the charge of want of

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humanity cannot be properly laid against a proceeding which terminates happily for both. From the manner of expressing the directions for the introduction of the hand, for the purpose of bringing down the feet, in presentations of the breech, we might conclude that it would be done with much ease. But on trial it is often found impossible without the exertion of very great force; and when this is done, or if the feet were originally in the *vagina*, though the first part of the extraction might be easy, we should in the progress find an increasing difficulty, which would bring the life of the child into great hazard. The thighs would advance more slowly than the legs, and the breech than the thighs; there would be some delay with the body, then with the shoulders, and lastly, when the arms are brought down, with the head. These little difficulties and embarrassments, separately considered, may not be of much consequence, but collectively they occasion a compression of the *funis*, continuing long enough to bring the life of the child into great danger, if not to destroy it; and this can only be prevented by a hurry in the extraction of the child, which may lacerate or do much injury

injury to the parts of the mother. If, on the contrary, we suffer the breech, especially with the legs turned upwards, to be expelled by the natural pains, the distention of the parts thereby occasioned is so ample, that the body and head follow immediately, or are readily extracted. In cases of the presentation of the breech or inferior extremities, it is therefore become an established rule with men of the first abilities and reputation, to suffer the breech to be expelled by the pains, and then to give such assistance as the exigencies of the case may require.

In every labour, in the progress of which we cannot feel the head of the child presenting, or do feel any other part, the membranes being unbroken, we must be particularly careful on no account to break them prematurely, that is, before the *os uteri* is fully dilated; because, whatever the presentation may be, the child is in no danger, till the waters are discharged; and a natural is always preferable to an artificial dilatation, however carefully made. But when the membranes break spontaneously before the *os uteri* is dilated, and we can discover the presentation of the breech or inferior extremities, it is proper to

leave the dilatation to the natural efforts, though it will be effected slowly and more awkwardly, than if it was done by the membranes containing the waters, or by the head of the child. The presentation of the breech is sometimes so untoward, that the *scrotum* and *penis* of the child intervene, and are the parts which are pressed upon the *os uteri* during its dilatation. In consequence of this pressure, which is unavoidable, these parts become prodigiously tumefied, and when the child is born, appear in a gangrenous state. In a few instances I have known the skin of the *scrotum* or prepuce slough away, but by the assiduous use of fomentations and cataplasms, farther mischief has always been prevented.

Though it may be proper, and is perfectly agreeable to the most respectable modern practice, to leave the child to be expelled by the pains, when the breech or inferior extremities present, unless the circumstances of the mother should require more speedy assistance: yet this resignation of the labour is only to be understood as proper, till the breech is expelled through the external parts, giving time for their dilatation, and guarding them

them with as much care as when the head presents. For after that time, as there is great danger of the child being destroyed by the compression of the *funis*, though of no long continuance, the labour must be accelerated by the practitioner, but with skill and judgment. That compression is also to be lessened, or any other injury prevented, by drawing the *funis* somewhat lower down, in such a manner that it may never be on the full stretch. In some cases, however, after the expulsion of the breech, the continuance of the pulsation in the *funis* very satisfactorily proves that no compression of importance has taken place; the child of course being in no danger, there is not occasion to hurry the delivery.

When the breech or inferior extremities have passed through the external parts, great attention is to be given to the position which the child bears with regard to the mother. Whatever that might be, the child would be extracted with equal ease till we came to the head; but if the face were turned towards the *pubes* of the mother, the head could not then be brought away, or its position conveniently changed, without much additional difficulty. As soon therefore as the breech is expelled,

if the back of the child is not turned towards the *abdomen* of the mother, it will be necessary that the practitioner, while he is extracting, should give such an *inclination* to the body, that when it is wholly extracted, the hind part of the head of the child may be turned toward the *pubes*, though not with a sudden motion or violence, lest the child should be thereby injured or destroyed. The directions given on this occasion are, that we should make the turn beyond the mere reduction of the back of the child to the *pubes*, and then revert it to a certain degree, by what may be supposed equivalent to a quarter turn. But such rules being very complex, are more apt to create confusion than to be of use, and are not founded on practical observation, but on an erroneous opinion that the head of the child could be extracted only or most commodiously, when the face of the child was turned toward the *os sacrum* of the mother. But it is now well known, that the head of the child will pass through the *pelvis*, with one ear to the *pubes* and the other to the *sacrum*, or in different degrees of diagonal direction regarding the cavity, and that it is not found to proceed exactly alike in any two labours.

When

When the child is brought down as low as the shoulders, it has been esteemed by some as a very injudicious practice, to bring down the arms of the child; these being turned along the head, preventing, in their opinion, that contraction of the *os uteri* round the neck of the child, which would be an impediment to its delivery. Others have considered this step as absolutely necessary in all cases, the arms, according to them, occupying a portion of that space, which should be filled up by the head only. If the extraction of the head with the arms turned up, be tolerably easy, there is clearly no occasion to bring them down; but if the head should remain fixed in such a manner as to resist the force which we think can be safely or prudently exerted, then the arms ought to be brought down; but very circumspectly, lest they should be fractured or dislocated, or come along with so sudden a motion as to endanger the laceration of the *perinæum*. Nor is there afterwards found to have been any reason for apprehending inconvenience from the spasmodic contraction of the *os uteri* round the neck of the child; at least it is not pro-

duced by this cause so commonly as by hurrying the first part of the delivery.

When the arms are brought down, should there be much difficulty in the extraction of the head, it will be of great use to pass the fore-finger of the left hand into the mouth of the child, and to press down the jaw, but not to pull by it, in order to change the position of the head, which may be easily done, and the extraction be thereby much facilitated; but of this difficulty we shall speak more fully when we consider the inconveniencies produced in this kind of labour, by the distortion of the *pelvis*.

In the extraction of the child, the body is converted into a lever or instrument for that purpose, and this will act in different cases, or different periods of the same case, with greater advantage, by changing the direction in which it is used. Accordingly in some cases, greater progress is made by acting alternately from side to side, and in others from the *pubes* to the *sacrum*, or in the opposite direction; and that way is to be pursued, in which we obtain the greatest advantage. When the head is passing through the external parts, these may be supported with the
fingers

fingers or palm of the left hand spread over the *perinæum*, while we are extracting with the right. As the head advances, the body must be turned more and more towards the *pubes*, and we must finish the operation very deliberately, or the parts will be lacerated; an evil rendered sometimes by precipitation and imprudent management, of almost as much importance as the loss of the child or mother.

Though children presenting with the breech are commonly expelled by the efforts of the parent, it must sometimes happen that these fail to produce their proper effect, and the assistance of art is required. But assistance is not to be given till, by the failure of the efforts, it is proved to be absolutely necessary; that is, when having given full scope and time to the efforts, they are proved to be unequal to the expulsion of the child. Whenever artificial assistance is given in these cases, it ought to be perfectly consistent with the safety of the mother, and, if possible, with that of the child, which must be considered and treated as if we were certain it was, and would be born living. When therefore we are satisfied and convinced that the mother is

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unable

unable to expel her child presenting with the breech, if the inferior extremities cannot be readily brought down, it will be proper, by hooking one or more fingers in the groin, to try whether we cannot give such an addition to the force of the pains, as may be sufficient to extract without injuring it. Should this force, though continued for some time, be proved unequal to the purpose, it will be found expedient to pass a garter, or a tape or ribband, over one or both thighs, one of which is usually pressed before the other, as the case will allow; and then taking both the ends of the ligature in the same hand, we shall have the opportunity of exerting great power, with less detriment to the mother or child than by any other means, with much convenience at the same time to ourselves, and generally with success. But if the breech should be so high, that the ligature cannot be passed, or its power be insufficient, and the necessity of delivering the mother should be urgent, then a blunt hook or the crotchet must be fixed over the thigh or in the groin of the child, and we must manage as in other cases of extreme difficulty and danger, as the circumstances will allow, but perhaps without following
any

any general rule, and without regard to the child.

It has been said that children presenting with the breech are generally born alive, and some writers have even considered the presentation of the inferior extremities, as natural, and preferable to that of the head; because assistance could be more readily given when it was required. It is true that the children will usually be born alive, if they are small, if the presentation occurs to those who have before had children, and the labour be not interrupted. But if it should be a first labour, and the children large, or even of a common size, they will be more frequently born dead, in consequence of some casual but destructive pressure of the *funis*, before the breech is expelled or afterward; and with respect to presentation, that which is most common is, for that reason, to be esteemed natural.

In all cases in which the child is expelled or extracted by the breech or inferior extremities, the *placenta* is usually managed without difficulty or danger, and it is generally excluded in a shorter time than after a natural birth.

SECTION IV.

ON THE DISTINCTIONS OF THE SECOND ORDER OF PRETERNATURAL LABOURS.

IN the second order of preternatural labours, the presentation of the shoulder, or one or both arms, may be included; and whichever of these is the presenting part, there is a necessity of turning the child, and delivering by the feet. In the management of presentations of this kind, there is always less difficulty if both arms present, than if there should be only one arm; it will therefore be necessary to speak only of the presentation of a single arm,

In ancient times it was the custom, in every kind of labour, except those in which the head originally presented, to return the part presenting, and to bring down the head; and if this was found impracticable, directions were given to bring the child away by the feet, or in any manner its situation would allow, or
the

the exigencies of the case might require. But we learn from *Ætius*, who lived probably about the fifth century, that *Philomenes*, whose writings, except those preserved by *Ætius*, are now lost, discovered a method of turning and delivering children by the feet; and this method, with some alterations and improvements in the operation, has been practised ever since his time, and considered as the only one, by which the child could be extracted, and the life of the mother preserved. But it was about twelve years ago my good fortune to discover, that in some of the worst kinds of preternatural labours, those in which the assistance of art is sometimes found to be insufficient and often unsafe, the powers of the constitution, if not impeded in their operation, are capable of expelling the child, with perfect safety to the mother, and without any additional danger to the child. Of the manner in which this delivery is accomplished by the natural pains, we shall speak in its proper place.

Though the necessity for turning children and delivering by the feet, in this second order of preternatural labours, be universally acknowledged, yet the circumstances of the

women

women suffering them, are exceedingly different. With the view of preventing or lessening the embarrassment of the practitioner, it is therefore requisite to make several distinctions, and we will say that it may be necessary to turn the child,

First. When the *os uteri* being fully dilated, and the membranes unbroken, a superior extremity is felt through them; or immediately upon the rupture of the membranes and the discharge of the waters, before there is any return of the pains, or any contraction of the *uterus* round the body of the child.

Secondly. When the membranes break in the beginning of labour, the *os uteri* being very little dilated, perhaps scarcely in a sufficient degree to allow a hand or an arm of the child to pass through it, or to discover that the presentation is preternatural.

Thirdly. When the *os uteri* is fully dilated, the membranes having been long broken, and the *uterus* strongly contracted round the body of the child, which is closely fixed at the superior aperture of the *pelvis*.

Fourthly. When, under any of these circumstances, there is a great disproportion between the size of the child and the dimensions of the *pelvis*.

Under each of these distinctions, a variety of other objects may require the attention of the practitioner, but of every one of these it is impossible to take notice in the description of any stated case, as no two labours ever were in all points exactly similar.

In the *practice* of every art, some advantages must remain beyond the power of any doctrine to teach or describe. These can only be obtained by the cultivation of our own minds, by experience, and by the acquisition of that dexterity which frequent exercise must give to our hands.

SECTION V.

IT is proper in the first place to speak of the method of turning children in those cases which come under the first distinction, the management of them being more easy and simple, as there is only one object which demands

mands our care, that is, to change the position of the child.

Whenever there is a necessity of turning the child, the patient is to be placed in the same situation as in a natural birth, upon her left side, with her knees drawn up, across the bed, and as near to the edge of it as possible. There have been many different directions and opinions respecting the advantages of particular situations, especially that of turning the patient upon her knees. But as our aim, in the choice or preference of these, is merely to obtain the free and most convenient use of our own hands, the position of the child remaining the same, however the woman may be placed, the common situation will generally be found most convenient. Yet as that situation which suits one practitioner may be awkward to another, and as in the course of the operation changes may be expedient, every practitioner must make them when they appear necessary to himself. To many it is more convenient to turn with the left hand than with the right, and of these every person will of course choose the best.

Though in the case we are now supposing, the *os uteri* may be fully dilated, it is possible
that

that the *os externum* may be in a rigid and contracted state. For the purpose of dilating this, it will then be necessary with the fingers of the right hand, reduced into a conical form, to act with a femirotatory motion, and with some degree of pressure upon the sides and towards the *perinæum*. The artificial dilatation of all parts should be slowly made, and in imitation of the manner in which they are naturally dilated; and we are not to be satisfied with such a degree of dilatation as will barely admit the hand into the *vagina*, because the contraction round the wrist would be an hindrance in the subsequent parts of the operation.

When the hand is passed through the *os externum*, it must be conducted slowly to the *os uteri*, which we presume to be fully or sufficiently dilated.

If the membranes are unbroken, the hand may then be conducted into the *uterus*, and they will be easily ruptured by grasping them firmly, or by perforating them with a finger. The hand must then be carried very deliberately along the sides, the thighs and legs of the child, till we come to the feet. If both the feet should be lying together, we must

grasp them in our hand; but if they are at a distance from each other, we may commonly deliver with one foot without much additional difficulty; though as in some particular positions we cannot always turn the child, if it be large, by one foot, it is better to make it a general rule to bring down both feet together, if they are in our power.

Before we begin to extract, we must examine the limbs we hold, and be assured we do not mistake a hand for a foot. The feet being held firmly in the hand, must be brought with a waving motion slowly into the *pelvis*. While we are withdrawing the hand, the waters of the *ovum* flow away, and the *uterus* being emptied by the evacuation of the waters and the extraction of the inferior extremities, we must wait till it has contracted, and on the accession of a pain the feet must be brought lower, till they are at length cleared through the *os externum*. The operation may then, in one sense, be said to be completed, that is, what was originally a presentation of the arm, is now become that of the feet, which considered as primary, might have been left to the efforts of the constitution in the manner before described. But as no person
who

who had undergone the operation of turning a child, with the expectation of a speedy delivery, would have patience to wait for the expulsion of the child by the natural pains, it is incumbent upon us to finish the delivery, though there is no occasion for hurry; and violence would be equally unnecessary and improper.

In the first place then, observing the direction of the feet, and knowing if the toes of the child are towards the *abdomen* of the mother, that this position would be unfavourable when the head was to be extracted, we must gradually turn the body of the child during its extraction, in such a manner that the back of the child may be placed towards the *abdomen* of the mother, before the head is brought into the *pelvis*. It was before observed that this turn of the child has been described with useless intricacy, and in a manner which can only serve to confuse the practitioner, who will reap all the advantage to be gained by any kind of turn, if he remembers in general, that if the back of the child is to the *abdomen* of the mother, the head will pass more commodiously than in any other direction. The opinion of the necessity of changing the position

of the child at this time has been so strongly inculcated and so eagerly pursued, that I have more than once seen it attempted with such a degree of force, as must have destroyed, or done very great injury to the child, had it been living, the operation being evidently more dangerous than the evil it was intended to remove. Nor is this the only case in midwifery, in which the means recommended for the purpose of preserving the life of the child, are utterly inconsistent with its safety.

When the heels or back part of the child are turned towards the *pubes*, the feet wrapped up in a cloth are to be held firmly about the ancles, and when the pains come on, we must extract in a straight direction, or from side to side, or from the *pubes* to the *sacrum*; taking care that we do not by violence, or by too large a sweep, run the risque of hurting the child, or of lacerating the external parts of the mother. In the interval between the pains we must rest, and in this manner proceed, assisting the efforts of the mother only at the time of her making them, and not rendering the delivery wholly artificial. When the breech of the child is arrived at and begins to distend the external parts, we must
proceed

proceed yet more slowly, giving time for their dilatation, supporting and favouring any part which may be immoderately distended, and guiding the child in a proper direction, by turning it towards the *pubes* as it advances. The breech being expelled, the *funis* soon appears, and a small portion of it must be drawn forth to prevent its being upon the stretch. Then wrapping a cloth over the body of the child, which must be held as close to the mother as it conveniently can, and calling for her voluntary exertions, the child is to be speedily extracted in the manner already described.

When both the arms are brought down, it is of service to suffer the body of the child to rest upon the left arm of the operator, his hand being spread under the breast, with a finger turned back over each shoulder. His right hand is to be laid in a similar manner over the shoulders of the child, and these positions will give him great advantage in the extraction. But if the head should not descend, the operator with his thumbs conducted into the *vagina* may press the head from the *pubes* to the *sacrum*; or pass the fore-finger of his left hand into the mouth

of the child, and extract as was before advised.

Proper attention must be immediately paid to the child, and of the management of the *placenta* we have already spoken.

SECTION VI.

IN the second distinction it was supposed, that together with the presentation of a superior extremity, there was at the time of the rupture of the membranes, very little dilatation of the *os uteri*, and some degree of contraction of the *uterus* round the body of the child.

The directions generally given on these occasions are, that as soon as the presentation is ascertained, the operator should sit down and dilate the *os uteri* sufficiently to allow the introduction of the hand, which should then be passed with care and expedition into the *uterus*, and the child turned. But some practitioners have judged it more proper to wait

wait till the *os uteri* was dilated naturally, before any attempt was made to introduce the hand and turn the child. As in every case of the presentation of the superior extremities, there is a necessity of turning the child, the sooner the hand can be passed for that purpose, the more safe and easy in general will the operation be, as there must of course be less contraction of the *uterus* round the body of the child. But as there is some hazard of doing mischief by every artificial dilatation of the *os uteri*, I believe it is better to wait for the natural dilatation; at least every attempt to dilate by art should be made with great caution, and only during the interval between the pains. Yet we ought not to wait in these cases, till there is a complete and absolute dilatation of the *os uteri*, but always to consider it as sufficiently dilated when we presume it will readily admit the hand, and then the child should be turned without delay.

If the external parts are rigid and contracted, they must be dilated, but without violence, in the manner before directed; and the hand being passed into the *vagina*, must then be conducted into the *uterus*, on that side of the *pelvis* where it can be done with most

convenience; because that will lead most readily to the feet of the child. It is generally better to conduct the hand between the body of the child and the *pubes*, than between it and the *sacrum*, because in these presentations the feet lie most commonly towards the *abdomen* of the mother. In every case which comes under the present distinction there is some degree of contraction of the *uterus* round the body of the child, though trifling when compared with what occurs in the cases to be described under the next section. If therefore we understand and are able to perform the operation of turning the child, in the easiest and most difficult cases, we shall certainly be competent to the management of all the intermediate ones; there being in these no new rules which we are required to follow, but merely an accommodation of rules already known, to the exigencies of any individual case.

SECTION VII.

UNDER the third distinction, we are to presume, that together with the presentation of a superior extremity, there is the worst possible situation of the child in all other respects; that is, an exceedingly close contraction of the *uterus* round the body of the child, the membranes having been long broken and the waters discharged; to which may perhaps be added, very strong pains.

In this case supposing the difficulty of turning the child as great as it possibly can be, it will follow that there is no occasion for hurry or violence, as we can lose nothing by delay. Before we proceed to the operation of turning, it will be therefore proper to repeat our examination, when we have taken a little time for the consideration of the case, in order to prevent any error in the first decision we have made upon the subject, and to ascertain the precise position of the child; and to reflect also, whether by some previous management,

nagement, it is not in our power to lessen the impediments to the operation and the general evils of the patient's state. In either of these views there are only two objects which can engage our attention; the wrong position of the child, and the strong contraction of the *uterus* round its body. The first of these, in the account given of the cases which came under the first distinction, was stated to be of little consequence; that is, to be manageable without difficulty, and to be void of danger either to the mother or child. The principal inconvenience will then be produced by the contraction of the *uterus*, which must be our duty to remove or lessen, before we attempt to perform the operation of turning the child.

The contraction of the *uterus*, under these circumstances, may be of three kinds. There is, first, the continued or permanent contraction, in consequence of the waters having been long drained off, and which to a certain degree takes place in all cases, when there has been but little or no pain. This may in fact be considered as the exercise of that inherent disposition in the *uterus*, by which its efforts are made to recover its primitive size and situation.

ation. There is, secondly, the occasional or extraordinary contraction of the *uterus*, by which, whatever is contained in its cavity, is ultimately to be expelled, which returns at intervals, and is so constantly attended with pain, that the terms pain and action are used synonymously. Thirdly, there is an irregular action of the whole or some part of the *uterus*, which is sometimes unfavourable to the expulsion of its contents, which produces effects according to its peculiarity, and this is called spasmodic; a general term, not wrested from its common meaning, but appropriated to every kind of morbid, irregular, or excessive action. Now the difficulty and the danger which attend the operation of turning a child, proceed either from the extraordinary or irregular action of the *uterus*, and in order to avoid these, as much as possible, it will be proper to establish it as a general rule, never to attempt the operation when the patient has very strong pains.

The consternation of friends, and the sufferings of the patient, must necessarily raise a suspicion in her mind, that there is something unusual and dreadful in her case, and the solicitude thence arising will increase the unavoidable

unavoidable inconveniencies of her situation. The prudent and steady conduct of the practitioner will, on such occasions, very much contribute to remove the fears of her attendants, and to give a composure to the mind of the patient which will be productive of the most happy effects. If she should be much heated, it will be also proper to take away some blood, and to direct an emollient clyster, for the purpose of emptying the *rectum*, and of softening and soothing the parts which are in a very irritable state. Even the time employed in these matters will give an opportunity for quieting the violent agitation of the patient's mind.

We are not at present in the possession or knowledge of any medicine which we can depend upon, for suppressing or moderating the action of the *uterus*, when exerted unfavourably, or at any improper time. Almost the only medicine we ever think of having recourse to on such occasions, is *opium*, and this given in two or three times the usual quantity, will in many cases of this kind answer our expectations; though it sometimes has a contrary effect, and excites the *uterus* to stronger action. If the opiate should fail to quiet the pains, and to compose the patient,

tient, we must wait till the *uterus* is wearied, or ceases to act of its own accord. But if the opiate should produce the effect for which it was given, it will be in about twenty minutes after its exhibition, when we are to consider the calm or disposition to sleep, as affording us the most favourable opportunity for turning the child.

Throughout the operation, it is necessary to bear in our minds the distinctions made between the different kinds of action of the *uterus*. The hand must be introduced with sufficient force to overcome the continued or permanent contraction of the *uterus*, or the operation could never be performed; and the same may be observed of the irregular or spasmodic action, but with perseverance rather than violence. But if we * were to attempt to overcome the extraordinary action, either the hand would be cramped and we should be unable to finish the operation; or if we had power sufficient to overcome the contraction of the

* Qui enim urgentibus doloribus, manus intus dare, vel fœtum dirigere, vel aliquod membrum replicare audent, iis evenire potest, ut uterus rumpatur, mulierq. subita morte rapiatur, cujus partus post obitum in ventre reperiri solet.

Platneri Institutiones Chirurgicæ, Pag. 1040.

uterus, there would be the greatest hazard of its being ruptured. The deduction is therefore plain, that we ought not to attempt to introduce the hand, while the *uterus* is in extraordinary action.

By the examination of the child's hand which presents, we shall be able to distinguish whether it be the right or the left; and which is of more consequence, by its position, to which part of the *uterus* the feet of the child are turned. For unless the arm or body be unnaturally twisted, the palm of the hand is always turned towards the inferior or extremities of the child.

It is in no case necessary, or in any wise serviceable, to separate the arm of the child, previous to the introduction of the hand of the operator. In some cases to which I have been called, in which the arm had been separated at the shoulder, I have found a great inconvenience, there being much difficulty in distinguishing between the lacerated skin of the child, and the parts appertaining to the mother. The presenting arm is never an impediment of any consequence in the operation, and therefore ought not to be regarded, or on any account removed.

It

It sometimes happens that the introduction of our hand is absolutely prevented by the shoulder of the child, jammed at the superior aperture of the *pelvis*. It will then be necessary to pass the forefinger and thumb of the right hand in the form of a crutch, into the armpit of the child, pushing the shoulder towards the head and towards the *fundus* of the *uterus*, at the same time firmly and steadily maintaining the advantage we gain as we proceed, till we have raised the body sufficiently to allow the admission of the hand into the *uterus*.

When we begin to make our attempts to introduce the hand into the *uterus*, though the patient might be in a composed state, the irritation thereby occasioned will disturb her, and the extraordinary action of the *uterus* be brought on, which will be indicated by the consequent pain. During the continuance of this action and pain, we must not proceed in our attempt, but wait till they cease, laying our hand flattened in such a manner, that no injury can be done by our efforts, or by the action of the *uterus* itself, upon any inequalities of the knuckles. When the action of the *uterus* ceases, our attempts to introduce our hand, must be renewed and steadily continued

tinued till that action returns, when we must again rest. Thus proceeding, that is, alternately resting and acting, we shall, by repeated and sometimes long continued efforts, at length safely accomplish the purpose of conducting the hand so far into the *uterus*, that we shall be able to lay hold of the feet of the child. In some cases our attempts to introduce the hand are very discouraging, as we are sensible of little or no progress; but the hurry or violence are never to be increased on account of the greatness of the difficulty. We must persevere, and be persuaded that prudent attempts will not be fruitless, though they immediately fail to answer our expectations; as each apparently unprofitable attempt contributes at least to the efficacy of the succeeding one.

The strongest contraction of the *uterus* is sometimes at the *cervix*, and when this is passed, ample room is afforded for the discovery of the feet towards the *fundus*, without much trouble. But the contraction of the *uterus* is very irregular, being in some cases in the center, or uniform throughout; whilst in others it is contracted into lines, as if a cord had been passed round it externally with great strength, so as even to hurt the hand. In
some

Some cases the *uterus* is also contracted into a globular and in others into a longitudinal form. These different contractions render some difference in our conduct necessary, but if we have a true general idea of the various kinds of contractions, as before described, the little increase or peculiarity of difficulty will be readily managed. In a globular contraction of the *uterus*, when our hand has passed beyond the *cervix*, there will be no trouble in coming at the feet, and the child will be turned very easily; but in the longitudinal contraction, the feet being at a great distance, there is more difficulty, though it is not always necessary to go up to the *fundus*; but when we come to the knees, these being cautiously bent, the legs and feet will be brought down together.

In whatever way we lay hold of the feet, we must examine them before we begin to extract; for though one arm be in the *vagina*, the other may be high up in the *uterus* and mistaken for a leg. We must also remember that it is necessary to extract slowly; for if we attempt to hurry the operation, the feet may slip out of our hands, and immediately recede to the *fundus* of the *uterus*, or to

the part from which they were brought, and lay us under the necessity of returning with the hand to bring them down again. When we have laid hold of the feet, if we proceed slowly, the child commonly turns without much difficulty. But when the feet are brought into the *pelvis*, if the turning of the child be not perfected, it will be of great use to fix the noose of a garter or ribband round one or both ancles, which may be conveniently done by forming it upon our wrist, and then sliding it with the fingers of the left hand, over the right hand containing the foot or feet, without quitting our hold of them; and dexterity in forming and fixing this noose may be of great use in the subsequent parts of the operation. When the noose is fixed and drawn tight round one or both the ancles, we may pull by both the ends of it with either of our hands, at the same time grasping the feet and extracting with the other hand, till they are brought through the external orifice. Should there be much difficulty in the operation after the feet are brought low into the *vagina*, we may conclude that it is occasioned by the body of the child being fixed across the superior aperture of the *pelvis*. To re-
move

move this impediment, it will be necessary to take the two ends of the noose into our right hand, and passing the finger and thumb of the left, in the form of a crutch, into the arm-pit of the child, we must extract with our right hand, and at the same time raise the body of the child with the left, till the child is disengaged, and there is sufficient room for the entrance of the hips into the *pelvis*. There will then be no further difficulty, and we must deliver as was directed under the First Order of Preternatural Labours.

SECTION VIII.

IN presentations of the superior extremities, when the waters have been long discharged, and the shoulder of the child is jammed at the superior aperture of the *pelvis*, it was said to be expedient and necessary, to pass the finger and thumb in the form of a crutch, into the arm-pit of the child, in order to raise the body

towards its head and towards the *fundus* of the *uterus*; till it was sufficiently moved out of our way, to allow of the introduction of the hand into the *uterus*. But in some cases, the shoulder is so far advanced into the *pelvis*, and the action of the *uterus* is at the same time so strong, that it is impossible to raise or move the child, which is so strongly impelled by the pains, as to overcome all the force we are able to exert. This impossibility of turning the child has, to the apprehension of all writers and practitioners, left the woman without any hope of relief. But in a case of this kind which occurred to me about twelve years ago, I was so fortunate as to observe, though it was not in my power to turn the child, that by the mere effect of the action of the *uterus*, an evolution took place, and the child was expelled.

Of the first testimonies * which prove the possibility of this evolution, which I have called spontaneous †, the public has long been

* See the London Medical Journal, Vol. V. for 1785; and the Journal de Medecin de Paris, pour Avril et Septembre, 1785.

† I used the word *spontaneous*, though to some it appeared objectionable, but I could not fix upon one better suited to explain

been in possession. The cases in which it has happened are now become so numerous, and supported not only by many examples in my own practice, but established by such unexceptionable authority, that there is no longer any room to doubt of the possibility of its happening, more than there is of the most acknowledged fact in midwifery. As to the manner in which this evolution takes place, I presume, that after the long continued action of the *uterus*, the body of the child is brought into such a compacted state, as to receive the full force of every returning action. The body in its doubled state, being too large to pass through the *pelvis*, and the *uterus* pressing upon its inferior extremities, which are the only parts capable of being moved, they are forced gradually lower; till the body turning as it were upon its own axis, the breech of the child is expelled, as in an original presentation of

explain my meaning. I only intended by it to say, that the series of effects terminating in an evolution of the child were wholly independent of the practitioner; but not that this was procured from any impulse or exertion in the body moved. In the sense in which I use the term *spontaneous*, it seems to be proper according to its common use in *medical*, though perhaps not strictly in *mechanical* language.

that part. Nor has there been any thing uncommon in the size or form of the *pelvis* of those women to whom this case has happened, nor have the children been small, or softened by putrefaction, because a child has been in this way born alive *. I believe on the contrary that a child of the common size, living or but lately dead, in such a state as to possess some degree of resiliency, is the best calculated for expulsion in this manner.

Yet the knowledge of this fact, however unquestionably proved, does not free us from the necessity and propriety of turning children presenting with the superior extremities, in every case in which that operation can be performed with safety to the mother, or give us a better chance of saving the child. Under such circumstances the instructions given by former writers, and the observations we have before made, must still be considered as proper to guide our conduct. But when we are called to a patient with a preternatural labour, in which there is no room to hope for the

* Dr. *Garthshore*, Consulting Physician of the British Lying-in Hospital, informed me of a case of this kind, in which the child was born living; and Mr. *Martineau*, an eminent surgeon at *Norwich*, informed me of another.

preservation

preservation of the child, or in which we are assured of its death, or when the operation of turning cannot be performed without great danger and violence to the mother ; then the knowledge of the probability of a spontaneous evolution will set our minds at ease, and disengage us from the hasty consideration of a hazardous operation, from which no possible good can be derived, except that of extracting a dead child, and which at all events might be effected by a much safer method.

The time required for the spontaneous evolution of the child, and the facility with which it may be made, will depend upon a variety of circumstances, but chiefly upon the size of the child, the aptitude of its position, the dimensions of the *pelvis*, and the power exerted by the *uterus*. If the child be very large, or much below the common size, the slower I believe will be the evolution, nor can it be made at all without a strong action of the *uterus*. It is possible therefore, when we have conducted ourselves on the ground of expectation that the evolution would be made, that the pains may fall off or be unequal to the effect, and we may be disappointed. It might then be apprehended, that the difficulty

of extracting the child would be infinitely increased. But though the evolution was not perfected, I have not found this consequence; for the child, though not expelled, has been brought into such a state, that I could afterwards pass my hand with ease, and bring down its feet, though in an attempt to do this in the beginning of the labour I had been foiled. In one case, in which the evolution did not take place, I could not bring down the inferior extremities, but I had no difficulty in fixing an instrument upon the curved part of the body of the child, or in bringing it away with entire safety to the mother. It was before presumed that the child was dead, and the sole object was to free the mother from her danger, and with her safety, no appearances of the child, however disagreeable, are to be put in competition. In cases of this kind another mode of practice has been recommended, that of separating the head from the body, with a blunt hook or other convenient safe instrument; but as I have never practised this method, I give the description of it in a note *.

In

* Hoorneus sæpe laudatus adhuc peculiarem novum, cumq; breviorum modum, foetum mortuum cum brachio arctissimi

In the course of my conversation and correspondence with medical friends, I have been informed of several instances of women who have died undelivered, their children presenting with the arm, because the practitioners were not able, by art or by force, to pass the hand into the *uterus*, to turn the child and deliver by the feet. These cases have been mentioned to me as objections to the spontaneous evolution, but, I apprehend, without reason. The evolution is supposed to be the consequence of the strong and long-continued action of the *uterus*, uninterrupted. Now the first part of the operation of turning a child by art, consists almost wholly in resisting this evolution; and if the attempts were persevered in, would be an absolute bar to its

in vagina uteri hærente, invenit atque descripsit: qui in eo consistit, ut quando ad pedes pervenire nequit, collum, utpote quod in fœtibus valde adhuc tenerum est, vel scalpello a reliquo trunco rescet, vel unco idoneo quam cautissimè auferat: hoc enim factò vel sponte mox prorumpit ex utero fœtus, vel tamen, dum brachium propendens attrahitur, quod medico tunc loco habenæ inservit, quam facillimè excutitur: caput vero deinde seorsim mox vel manu, vel aliis propositis artificiis, si manus parum esset, ejiciendum.

Heister. Cap. Clij. sect. ix.

taking

taking place. To give a full explanation of my opinion, I should say, that a woman in a state of nature, with her child presenting in any manner, would not die undelivered, if no assistance was afforded to her. But if an equally healthful woman lived in a country somewhat civilized, in which the art of midwifery was in an imperfect state, much would be thought requisite to be done, and violence supplying the place of knowledge and skill, she might perish from the ungainly and rude exercise of art, rather than from the necessity of her case. In the most perfect state of society, all just and true knowledge being founded upon observation of the proceedings of Nature, and all sound practice upon the imitation, the practitioner would return to the primitive state; that is, he would do nothing unless it was absolutely necessary for him to act, and then he would act in imitation of Nature. From a retrospective view of the practice of midwifery in all former times, and in all countries, every intelligent person sees, and is ready to acknowledge, that there has been too officious an interposition, and too great a readiness to give assistance in various ways, for the relief of many difficulties attending parturition,

turition, which are not only fully proved to require no assistance, but which are also now allowed to be surmounted in a safer and more effectual way by the resources of the constitution. This should certainly put us upon our guard against hasty determinations upon what is possible or otherwise, or upon the use of any means which may be destructive to the child, or injurious to the mother*.

* In *America* and *Africa* the native women, whom we may presume to be healthy, very seldom die in labour, or in consequence of it. Properly speaking, they have no midwives. The same may be observed of the women in *Lapland*, and other northern countries. Yet the *African* women, when transplanted to the *West-India* colonies, not unfrequently die. They are attended by ignorant midwives. In the *East-Indies*, the midwives of the country are ignorant and daring, interfering perpetually, and often in the most outrageous manner, with the women in labour, many of whom die, or suffer grievous complaints for the remainder of their lives. In *England* the practice of midwifery is extremely reasonable, and it is a rare thing for women to die in labour, or in consequence of it, unless when there is some dangerous epidemic disease. In *France*, the practice of midwifery is more artificial, and there is, both in that and other countries on the continent, a very reprehensible fondness for instruments and operations; and the abuse of art produces more and greater evils than are occasioned by all the imperfections of Nature.

Now

Now that I am speaking of the spontaneous evolution in presentations of the arm, it will not be amiss to observe, that several other changes of the position of the child take place, at the time of birth, particularly the following, of which I have seen more than one instance. Having been called to women in the beginning of labour, and finding by an examination that the head of the child presented, I have left them for several hours till the first changes were naturally made. When I have examined them on my return, I have found the arm of the child presenting, the head being departed out of my reach. I do not know that any practical advantage is to be obtained by the knowledge of these cases; but it is remarkable that the accident has always happened to women who were deformed. Such cases however should be recorded, and it is possible that, some time or other, the knowledge of them may be of use. It may lead to an explanation of one cause at least of preternatural labours.

SECTION IX.

To the preternatural presentation of the child and the circumstances before mentioned, there may be added a distortion of the *pelvis*. As there is no occasion to repeat the management which the other circumstances may require, we may confine our attention to the peculiar difficulties produced by the distortion. Some disadvantage may arise from this cause in the extraction of any part of the child, but it will be trifling if compared with that which attends the extraction of the head; we may therefore be allowed to suppose that the whole of the child is born except the head, which cannot be brought away in the usual manner, or by the means before advised. The force with which we endeavour to bring down the head of the child must then be gradually increased, till we are convinced that a greater degree is inconsistent with the safety of the child.

The wish to extract the head of the child speedily, is founded on the apprehension, justly entertained, that in this position the life of
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the child is in the most imminent danger, from the compression of the *funis*. A vigorous pulsation proves, even at this time, that the child is not in any danger, and of course gives us an opportunity of acting with deliberation. But should the pulsation which was at first lively and strong gradually decline, and then altogether cease, the head must be speedily extracted, or the child will be inevitably lost, there being no other way of removing the compression, or of preserving its life.

The extraction of the head may then be attempted with two views, either to save the life of the child, or merely to free the mother from any danger which might arise from its detention. When the first is our aim, the force with which we extract must be moderate, and consistent with the safety of the child; it must be exerted in a proper direction of the *pelvis*; it must be uniform and commanded; and if there be any pains, it must accompany them. Should the head descend in ever so small a degree, we must not act precipitately, and increase the force in order to finish the delivery suddenly, but we must proceed with circumspection, or we shall add
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to the danger which the child is already in, and run the risque of doing injury to the mother. When the head begins to advance, there is seldom much difficulty, the cause usually existing at one particular part of the *pelvis*. It has been said, that children have been sometimes born alive, when the strongest efforts, and those continued for many hours, have been made to extract the head detained in this position. But I have not been so fortunate as to meet with any such instances, a short space of time having been sufficient to frustrate my hopes, and convince me that the child was dead; though, sometimes beyond my expectations, I have been agreeably surprised with the discovery of some faint signs of life, which, by the assiduous and careful use of the common means, have been improved, and the life of the child at length perfectly recovered.

But when we have abandoned all hope of preserving the child, and have no other view but simply that of extracting the head, we must be particularly cautious, that through our conduct the mother does not suffer either any immediate injury, or that any foundation of mischief be laid, which may shew itself
at

at some future time. When we have in vain exerted all the force which we think reasonable and proper, and which in some cases must be more than any circumstances would be thought to require, it will be expedient to rest, for the purpose of gaining all the advantage to be obtained by the compression of the head. On this account, the mother will actually suffer no more inconvenience, than would have been produced if the head had originally presented, and been locked in the *pelvis*. After waiting some time, we must renew our attempts to extract, and thus proceed, alternately resting, and acting with efficacy and resolution, and if the hold we may have of the body or extremities of the child does not suit, a silk handkerchief or other band may be passed round its neck, and this will be found a very handy and convenient instrument.

The great impediment to the extraction of the head of the child exists in the disproportion between it and the *pelvis*. Another of no little consequence may be produced by the dislocation of the neck, or the laceration of the skin, either of which would lead to the separation of the body from the head; an accident

cident one would wish to avoid, as it would lay us under the necessity of using some awkward instrument, instead of the body of the child. Either of these inconveniencies is readily occasioned by the impatience or despair of the practitioner, who is apt to twist the neck while he is extracting, or to pull with a sudden motion, instead of the uniform one before recommended.

In these cases of extreme difficulty, it will always be of service, and often succeed when other means fail, if we can conduct our thumbs between the head of the child and the *pubes*, and press the head forcibly towards the hollow of the *sacrum*. It would also be of service if we were able to pass a finger into the mouth of the child, to change the position of the head; but in the worst cases that is impracticable, the head being obstructed so high, that the mouth of the child is beyond our reach. When all these means fail to answer our purpose, it will be necessary to leave the head a yet longer time, that it may undergo a greater degree of compression and accommodation to the *pelvis*, and then to renew our attempts to extract it.

It must be a very great disproportion between the head of the child and the *pelvis*, which is able to withstand this method of proceeding, if we persevere in it with prudence and steadiness, because the integuments of the head will burst, or the bones be bent inwards in an extraordinary manner, or even broken. Sometimes, however, an hemorrhage comes on, or the situation of the mother will not allow us to take so much time, or proceed so slowly, as is generally proposed, and we are compelled to the use of such means as promise a more speedy completion of the delivery. Different kinds of *forceps* have been advised for this purpose, but no instrument of the kind ought to be used on such occasions, because the child is dead; and it would be impossible but that the mother must by their use undergo the chance of mischief, without any equivalent advantage. It then only remains that we should lessen the head of the child, and the operation is as easily performed in this, as in the natural presentation of the head. In the description of this operation it was said, that it clearly divided itself into three parts: 1. perforation of the head; 2. evacuation of the brain; and lastly, extraction.

It

It will not be possible to make the perforation in the usual place, but we must select that which offers itself most conveniently. We must recollect that there is a small fontanelle behind each ear in the head of a *fœtus*, which is a convenient place for the purpose ; or it may be done at the basis of the *cranium* through the mouth ; or, in short, in any part where we can fix and command the use of the perforator, except perhaps the occipital bone, where we might cut the ligaments which join the neck to the head, and when we thought to extract, we should leave the head behind. When the perforation is made according to the rules before mentioned, and the brain evacuated, the head may be readily extracted, either by pulling by the body of the child, or by inserting a crotchet in the opening made by the operator as in other cases. But it would be scarcely believed how seldom this operation is necessary under these circumstances, if we are not in a hurry, but act with prudence. Nor have I ever known any ill consequences follow the compression which the soft parts undergo, between the head of the child, and the sides of the *pelvis*, if proper attention was afterwards paid to the state of the bladder and *rectum*.

SECTION IX.

THOUGH with cautious management the head of the child is seldom separated from the neck, and though with indiscretion it could not often be produced, yet the possibility of the accident, when there is very great disproportion between the dimensions of the head and of those of the *pelvis*, especially in the case of a child some time dead, makes it necessary for us to be prepared for managing the case if it should occur. It has moreover been surmised, that under peculiar circumstances it might be eligible to separate the head from the body, with the expectation of afterwards extracting the head with more ease; but this, however just in theory, will not, I believe, give us any advantage in practice, at least so the accident seems to have proved, when it has unavoidably happened, in cases of distortion of the *pelvis*.

When the head of the child has been left behind, the case was considered as frightful and exceedingly difficult to manage, because the
pelvis

pelvis may be expected to be very small in proportion to the size of the head, and because it could not without great difficulty be fixed in such a manner as to be conveniently subject to the instruments which it may be necessary to use. Of these there has certainly been a sufficient number of almost every denomination. It is nevertheless evident to every practical man, that the greater part of them were contrived by ingenious men in their closets, and either could not be applied, or if applied, could not be of any service in a case of real difficulty.

The chief obstacle to the extraction of the head, must arise from the disproportion between it and the cavity of the *pelvis*; and this disproportion can only be removed by lessening the bulk of the head. If this was fixed firmly in the *pelvis*, there would be no more difficulty in making the perforation, or in any part of the operation, than in a case in which the head originally presented. But should the head be disengaged, and lying loose at the superior aperture of the *pelvis*, it would not make due resistance to the point of the perforator, which would be apt to slide, we should be foiled in our attempt, and incur the hazard of injuring the mother. To avoid this incon-

veniency and mischief, external pressure must be made either by the hands of an assistant, or with a napkin passed round the *abdomen* with sufficient firmness to keep the head steadily fixed. Then the operation of perforating and lessening the bulk of the head may be performed without any chance of failure or of mischief. In the very few cases of this kind to which I have been called, the difficulty has not by any means been equal to what I expected from the representation of different writers. It is a case to be prevented or avoided; but when it does occur, there is neither that danger in the case, or that difficulty in the operation, which ought to terrify a practitioner who has common resolution, and who gives himself time for a little reflection. It is however said, that in some instances every attempt to extract the head has been in vain, and the patient has been resigned to her fate. Yet even in these cases, after a certain time, the action of the *uterus* has come on, and at length expelled the head; in one case, if I am not mistaken, so late as the twentieth day after the accident had happened. The degree of distention of the *uterus*, occasioned by the mere head of a child, would not indeed be so great as to make us apprehend

any fatal consequences on that account; and if the *uterus* be in an healthy state, a substance of that bulk and kind would be managed, either by common putrefaction, reducing its size, and dividing it into portions, or it would by repeated efforts be expelled.

C L A S S F O U R T H.

ANOMALOUS, OR COMPLEX LABOURS.

F O U R O R D E R S.

O R D E R I.

LABOURS ATTENDED WITH AN HEMORRHAGE.

C H A P T E R XIV.

S E C T I O N I.

IT is necessary to premise, that no practical advantage can be derived from the arrangement of these labours into one class. It is merely of use for the convenience of doctrine, and to prevent the multiplication of classes; for there is not the least resemblance between
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the different orders of anomalous or complex labours, which do not therefore admit of any general character or definition.

Uterine hemorrhages, from different causes, very frequently occur in practice, and always require great attention; but those which we are about to consider in this place, are such as depend upon the states of pregnancy and parturition. These have ever been esteemed as constituting a very important part of the practice of midwifery, on account of the immediate and great danger with which they are often attended; and because the safety of the patient, in these cases, more frequently depends upon the judgment and skill of those under whose care she is placed, than in almost any other circumstances. The subject therefore demands to be treated with the utmost circumspection; and though much industry hath been employed upon it, there is reason to believe, that the knowledge of many things of which we are at present ignorant, is wanting for the perfection of the rules of practice. The knowledge however which we do possess, it is incumbent upon us to place in the most advantageous point of view, that it may be converted to use; that we may be enabled to do
what

what reason and experience dictate to be necessary and proper; that we may determine upon the proper time of doing it; and be warned moreover to avoid doing what is useless or hurtful.

The word hemorrhage does not apply with propriety to all discharges of blood from the *uterus*, some of these being natural or salutary. The menstruous discharge is natural, but if it should be excessive in quantity, or prolonged beyond its usual time, it might be called an hemorrhage. Every discharge of blood which occurs during pregnancy, however small, may be called an hemorrhage, because it is not natural at that time. The same observation may be made of those discharges which happen between the birth of the child and the expulsion of the *placenta*. But the discharges which happen after the expulsion of the *placenta*, cannot be called hemorrhages, unless they are excessive in their degree, because some loss of blood is at that time necessary and natural. We may then say that all effusions of blood which are inordinate in quantity, or irregular in the time of their appearance, or in both respects, may be denominated hemorrhages; and these, which are the objects of our
present

present consideration, may be divided into four kinds.

1. Those which occur in early pregnancy, or in abortions.

2. Those which occur in advanced pregnancy, or at the full period of utero-gestation.

3. Those which happen between the birth of the child and the expulsion of the *placenta*.

4. Those which follow the expulsion of the *placenta*.

Under one or other of these distinctions, will be included every kind of hemorrhage which depends upon pregnancy or parturition; and this arrangement will not only convey a clear idea of the subject, but be of use also in practice. Yet it is necessary to observe, that there may be a combination of the three last kinds, or any two of them in the same patient; but whether they are separate or combined, the different modes of treatment may be applied with equal propriety and advantage.

Greater accuracy is nevertheless required in the description of what is meant by early or advanced pregnancy, or we may entertain different notions of the same thing. Perhaps

haps no exact line can be drawn for this purpose, as contingent circumstances may cause a variation in different women ; yet the best, which the nature of the subject admits, is to be taken from time. We will then say that all expulsions of the *fœtus*, before the termination of the sixth month of pregnancy, may be called abortions ; but all expulsions in the last three months, shall be considered as labours, premature or regular. There is a practical reason for this distinction, for before the termination of the sixth month, these cases neither require nor allow of manual assistance ; but in the last three months, they admit of manual assistance, if it be required, though not with equal ease, for the longer the time which is wanting to complete the period of utero-gestation, the greater the difficulty will be which attends any operation. It is also to be observed, that expulsions of the *fœtus* sometimes happen so critically, as to render it an extremely difficult thing to decide, to which of the distinctions they ought to be referred ; and in these, if we knew any method of treatment between that enjoined for abortions, and at the full period, it would be most eligible. But on this as well as many other occasions,

there

there is room to observe, that when every doctrinal distinction has been made, no precise rule can be formed for the conduct of the practitioner, in every possible situation in which a patient may be placed; but he must ever be at liberty to exercise his own judgment.

It would be curious, and might be of some utility in practice, to ascertain whether women, on account of their menstruation, or their erect position, or the structure of the *ovum*, or from any other cause, are naturally more liable to abortions than animals; or whether frequent abortion in women may not be considered as an attributive, either of habits, superinduced by modes of living, or of accidents which might be avoided. There is great room to lament their frequent occurrence in the more civilised, perhaps luxurious scenes of life, and in those constitutions which are extremely delicate. Yet in those situations which might be presumed to be most unfavourable to the sex, among the lowest ranks of life, abortions, except from violent external accidents, rarely happen; so that there is some reason for believing that women in a state of nature would seldom suffer abortion.

According

According to the opinions nevertheless of many systematic writers on this subject, every action in common life has been assigned as the cause of abortion; and in general that, about which the patient was employed, when the first symptom appeared, is fixed upon as the particular cause, though probably she was before in such a state, that abortion was inevitable. But if this opinion of abortion be just, then the event ought rather to be imputed to some previous indisposition, or perhaps to the excess of such actions, than to the exercise of the body on common occasions. Greater practical benefit will be obtained, if we seek for the causes of abortion in the general infirmity of the constitution, or in some particular state of the *uterus*, or its appendages, than by attributing it to these accidents. As far as the constitution may be altered, by the reduction of the general strength, by plethora or febrile disposition, so as to be unable to perform its functions, or to perform them with propriety and regularity, we may esteem every cause capable of producing such a state, as a primary cause of abortion. It does not often happen that simple weakness is a cause of abortion; for women who prove with child, in
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very weak and reduced states of the body, particularly in consumptions, in whom there is a great aptitude to conceive, have, of all women, the least disposition to miscarry, yet a state more feeble and more irritable could with difficulty be pointed out. But the weakness and irritability is then of a particular kind, not arising from, connected with, or influencing the *uterus*, which proceeds in the performance of its functions, as if the constitution was in a state of perfect health. We may hence conclude that either weakness or irritability in general, are seldom causes of abortion, but some weakness or imperfection originating in, or affecting the *uterus* or its appendages; or a peculiar kind of irritability, thence proceeding, distinguishable enough in the female character, by a careful observer, which creates impatience of mind and restlessness of body; in which every occurrence is the parent of fear and solicitude, and every office is performed with hurry and vexation. As an abundance of acrimonious, or some other humour, or some quality of the body, may transfer this state to the mind, so the mind often reverberates this state to the body, the continuance of which will often prevent the regular

gular performance of any process. It is therefore often found of as much importance, to give composure and steadiness to the mind of a patient, and to lead her to hope and cheerful expectation, by soothing and comfortable conversation, as it is to administer medicines to the body.

With respect to the state of the *uterus*, the opinion originally entertained and still pursued, as far as can be collected from the medicines usually prescribed, was, that it failed to perform its office on account of its excessive lubricity, as if the *ovum* slipped out of the *uterus*; but this idea will not bear examination. It is remarkable that women who are in the habit of miscarriage, go on in a very promising way to a certain time, and then miscarry, not once, but for a number of times, in spite of all the methods which can be contrived, and all the medicines which can be given; so that there is often reason to suspect that the *uterus* is incapable of distending beyond such a size, before it takes its disposition to act, and that it cannot be quieted till it has excluded the *ovum*. What I am about to say will not, I hope, be construed as giving a licence to an irregularity of conduct, which may often be assigned as the immediate

mediate cause of abortion ; or lead to the negligent use of those means which are likely to prevent it. But from the examination of many *ova*, after their expulsion, it appears that their longer retention could not have produced any advantage, the *fœtus* being decayed, or having ceased to grow long before its expulsion ; or the *ovum* being in such a state, that it was become wholly unfit for the office which it was designed to answer ; so that if we believed there was an intelligence communicating with every part of the body, we should say, it was concluded in council, this *ovum* can never come to perfection, and the sooner it is expelled the better.

Conception probably depends upon the perfect state of one or both *ovaria*, and will therefore sometimes take place when the *uterus* is very much diseased ; but the progress depends upon the state of the *uterus*, and chiefly upon that of the *fundus* ; for I have known several instances, of women who had considerable excrescences and induration about the *os uteri*, who have conceived, and gone on to their full time without any inconvenience. The imperfections observable in *ova*, are of different kinds, and found occasionally in every part.

There is usually a consent between the *fœtus* and the shell of the *ovum*, as the placental part and the membranes may be called, but not always; for examples have occurred in which the *fœtus* has died before the termination of the third month, yet the shell being healthy, has increased to a certain size, has remained till the expiration of the ninth month, and then been expelled, according to the genius and constitution of the *uterus*. But if the shell becomes diseased, then the *fœtus* being deprived of its nourishment, is of course destroyed, and both are expelled, as any other extraneous body would be, though not immediately on the accession of the mischief. The part of the *ovum* most commonly found diseased, is not that which passes from the *ovarium*, but that production of the *uterus*, which is prepared for the reception of the *ovum* after its passage from the *ovarium*, and which may be called the connecting membrane of the *ovum*. Between this and the outer membrane of the *ovum* there is usually a great effusion of blood, which insinuates itself through the cellular membrane of the *placenta*, and between the membranes giving to the whole *ovum* a tumid and unequal appearance,

ance, like that of a lump of coagulated blood. It is probable that either the connecting membrane is imperfectly formed, or there is some difficulty, and a failure in the completion of the union between it and the *ovum*; and according to this opinion the causes of abortions are to be sought for in the female only, contrary to what I formerly suspected.

All the means which can be advised with any prospect of success, in the treatment of abortions, whether the cause consists in the constitution or in the *uterus*, may be considered as preventative or curative. In either of these views we must chiefly recur to the constitution, as in the first case, it is the great object of our attention; and in the second, as the principal chance of producing any salutary change in the *uterus*, is through the medium of the constitution, on the improvement of which our success must depend.

As women with different constitutions and different states of health are subject to abortion, every mode of treatment must be accommodated to the constitution of each patient, and to the disease of which there may be any indication. In plethoric and febrile habits, it may be proper to bleed, soon after the sup-

pression of the menstruous discharge, and occasionally afterwards; to enjoin a spare diet, and to give cooling medicines; and perhaps in some habits, in which the *uterus* may be supposed unwilling to distend beyond a certain size, to prescribe opiates in small quantities often repeated, and sometimes tepid bathing. In debilitated and languid constitutions, strengthening medicines of every kind will be proper, as bark with elixir of vitriol, bitters of various kinds, and chalybeate medicines, in the officinal or extemporaneous forms, or mineral waters in small quantities. The cold bath, sea-bathing especially, is pretty constantly recommended for the general purpose of improving the health, not only in those who have a disposition to abortion, but in those also who are accustomed to bring forth dead children, or who are prone to hemorrhages at the time of delivery; and experience has shewn that it may be continued through the whole time of pregnancy with safety and advantage. For the great purpose of establishing permanent strength in those who have had long continued ill health, or who are in a habit of these untoward accidents, nothing seems better calculated, or is found to be more useful,

useful, than travelling; not taking a hasty journey, but wandering about for many months, by which the evils which appertain to the refined scenes of civilised life are done away, the mind becomes soothed and composed, and the corporeal advantages of a natural state are, in some measure, acquired.

When the health cannot be confirmed, so as to enable the constitution to bear the common exigences of life, it has been thought adviseable to remove patients from them by confining them to their house, to a floor, or a single room; or even to an horizontal position, throughout pregnancy. Some instances of advantage from this practice I have known; but if we consider abortions as proceeding from weakness, or too great a degree of irritability, confinement to a room, or any treatment by which both those evils are likely to be increased, seems a strange method of preventing mischief; and from what I have seen of the general issue of such practice, much cannot be said in its favour, the event being usually deferred, but not hindered. In the management of some cases of this kind, I have thought myself entitled to credit, but I must also acknowledge that I have been

more frequently disappointed; yet for some reason, not obvious or easy to discover, the patient, wearied with the fruitless attempts of art, and deserting all rules, has another time escaped the abortion, which I had before in vain attempted to prevent.

With respect to that state of the *uterus* itself, which may be considered as the cause of abortion, should there have been any indication from the discharges being irregular or profuse, if they are of the sanguineous kind; from their quality or degree, if of that kind which pass under the general name of weakness, it is first to be determined whether they are symptoms indicating a certain state of general health, or any morbid disposition of the *uterus*. Should they even be of the latter kind, it is often by application to the constitution at large, that we have the power of making any material alteration in the state of the *uterus*. Something may however be done by local applications of various kinds, but their activity must not be such as to make too quick an alteration, by suppressing suddenly any kind of discharge to which the part itself, or the constitution, may have been long accustomed. For it must be observed, that disagreeable as these

these discharges are, they are often of secondary use; that is, if we suppose a certain state of the *uterus*, the discharge may be absolutely necessary for its relief, while it remains in such a state, and the state is to be changed previous to the suppression of the discharge; or, instead of removing, we shall add to the disease. In such states of the *uterus* as dispose to abortion, I have not dared to advise any more active application than the Bath or Buxton Waters, which may be injected into the *vagina*, in the interval between the two periods of menstruation, or even for a longer time. I say into the *vagina*, because I do not approve of the daily introduction of any instrument within the *os uteri*, on this account, or for the relief of any other disease.

The circumstance attending abortions, and the symptoms by which they are threatened or accompanied, are very different, as are all the effects arising from uterine disturbance. But there is generally pain in the back, *abdomen*, and inferior extremities, with a sense of weight in the region of the *uterus*, frequent micturition, and a tenesmus; but the most certain sign of an abortion, is a discharge of blood,

which proves that some part of the *ovum* is loosened from the *uterus*.

When such discharge happens during pregnancy, especially at an early period, it has been a received opinion that abortion was inevitable, because it was presumed that the separation which it proved could not be repaired. It must be allowed that under such circumstances there is always too much reason to expect an abortion, yet experience has fully shewn, that women who have had not one, but repeated discharges, and sometimes to a profuse degree, have gone to their full time, without any imperfection in the child, or any detriment to the mother; the loosened part, by some operation beyond human skill, having been cemented and re-united to the *uterus*. There seems to be just so much chance of preventing an abortion, when there has been a discharge of blood, as to make it worth while to use the common means for that purpose, and to keep the patient cool and composed.

There is an almost endless variety in the manner in which abortion happens. Some women abort with sharp and long continued pains; others with little or no pain,

the *ovum* gliding out of the *uterus* almost imperceptibly ; some with a profuse and alarming hemorrhage, others with very little discharge. In some, the *ovum* has been soon and perfectly expelled ; in others, after a long time, first the child, then the *placenta*, whole, or in small portions, or part of it dissolved. But whatever other pain or trouble may attend, the hemorrhage is the only immediately alarming symptom ; I say immediately, because every practitioner must be convinced that either abortions occasion local diseases, or the time of abortion is an era, from which we may date the commencement of some dangerous diseases of the *uterus*. It has also been imagined, that the safety of the patient very much depended upon the complete and speedy expulsion of the *placenta* ; and when it was retained, very active deobstruent medicines were supposed to be necessary, and strenuously given for the purpose of expelling it, lest it should become putrid, and some of the putrified parts be absorbed into the constitution. I believe the whole supposition is groundless, having seen many instances of its being expelled in a very putrid state, when the patient

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was in perfect health; and when the patient had a disease, the putridity of the *placenta* seemed the consequence not the cause of the disease. At all events, much less mischief may be expected from the retention of a putrid *placenta*, than from attempts to force it away by the medicines usually given, or by manual assistance.

The degree of hemorrhage in abortions is not always in proportion to the period of pregnancy, but it depends upon the difficulty with which it may be expelled; sometimes upon the cause, and perhaps upon some peculiarity in the constitution, as happens in the menstruous discharge.

A notion of there being something mysterious in uterine hemorrhages, different from those from any other part of the body, has been entertained, and supposed to occasion the necessity of a peculiar treatment. But it is now agreed, that the general principles which guide us in the treatment of hemorrhages, from any other part of the body, are with equal propriety applicable to those from the *uterus*. We must however recollect, that in uterine hemorrhages, depending on pregnancy, there is an additional circumstance, which

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we are ever to bear in mind ; that they are ultimately to be suppressed by the action of the *uterus*, expelling whatever may be contained in its cavity.

Hemorrhages of all kinds are moderated, or wholly stayed, by the formation of *coagula* at the orifices of the open vessels ; or by the contraction of the coats of the vessels themselves, by which their orifices are lessened or closed. The latter of these effects being stronger and more active in arteries than in veins, may be a reason for the common observation, that hemorrhages from arteries, though in an equal degree, are less dangerous than those from veins, in which the power of contraction is wanting. It has been proved by physiologists, that both these effects, that is, the formation of *coagula*, and the contraction of the vessels, are favoured when the blood circulates most slowly, as in fainting ; not to mention the quantity of blood lost in a given time, will depend upon the rapidity or slowness of the circulation, as well as upon the size of the vessel opened. But in a state of faintness, which speedily follows all profuse hemorrhages, the three effects are produced at the same time. During faintness, the advantage

vantage arising from the contraction of the *uterus* is likewise obtained; for this acts, or makes its efforts to act, in sleep, during faintness, and sometimes even after death. Fainting may then be considered as a remedy provided by nature for averting the immediate danger of all hemorrhages, and to prevent their return. Cordials or stimulants should not therefore be given to those who are faint from hemorrhages, till by the duration of the faintness we conclude there has been sufficient time to produce those effects which would prevent a renewal of the hemorrhage, or lessen its danger if it should return.

The *materia medica* abounds with articles under the class of astringents, many of which are given indiscriminately in hemorrhages and profuse discharges of every kind; nor does much distinction seem to have been made between those which were found useful in hemorrhages as applications, and those which were given internally. It has rather been concluded that what was found useful as an external application, would of course be profitable if given internally. It is however clear that astringent medicines properly so called, can have no immediate power of
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stopping hemorrhages from the *uterus* or any other part of the body, excepting the intestinal canal; but that every medicine which slackens the circulation of the blood, becomes eventually an astringent. If the patient therefore be plethoric or heated, it may be proper to bleed in an incipient abortion accompanied with an hemorrhage; though if the patient be reduced to a state of great weakness, that operation would be useless and improper. The saline draughts with nitre, or nitre alone; or acids mineral or vegetable, may be given as frequently and in as large a quantity as the stomach can bear. Even the nausea, which these and other medicines sometimes produce, has, by no forced construction, been considered as an artificial imitation of faintness, and found serviceable, and medicines have been given expressly for that purpose; the safest perhaps and not least effectual of which is *Ipecacuanha*, in small quantities, often repeated, so as to keep up a perpetual nausea. Oil of *turpentine* has been recommended as a very powerful medicine in hemorrhages, but I think it is better suited to those which are habitual than to those which are instantly profuse and dangerous. When the discharge is

profuse,

profuse, cloths wet in cold vinegar may be applied to the *abdomen* and loins, and changed when they grow warm. In *Italy* and other hot countries, it is a custom to sprinkle ice upon the patient. On the same principle clysters of cold water have been also advised. The patient should be exposed to, and suffered to breathe, the cold air. In short, every application and medicine, actually or potentially cold, the coldest water, even ice itself, if it can be procured, may be given and repeated with probable advantage, when the exigency of these cases requires very powerful assistance.

Injectiions of cold or astringent fluids into the *vagina*, have been recommended as being of great service for the suppression of uterine hemorrhages. If we attempt to throw up the injections when the blood is flowing in a full torrent, they will be immediately rejected ; and if they are used with the view of preventing a return of the hemorrhage which has already ceased, it is rather to be expected, by washing away the coagula formed and applied to the orifices of the vessels, that they would occasion it. The principal good that could be derived from them, probably is by
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their action upon the internal parts as a cold application, and in this view ice has been introduced into the *vagina*. Less objection may perhaps be made, and equal or rather greater advantage will attend the introduction of lint, or any soft substance, moistened with spirit of wine, into the *vagina*, which serves the purpose of forming coagula, and applying them to the orifices of the opened vessels. But I have generally been satisfied with the application of a cloth wet with cold vinegar to the external parts, with so firm a pressure, that the stream of blood should be instantly retarded or stopped. This might have been originally done instinctively, to remove the immediate dread of the hemorrhage, and to give me a little time to reflect and determine how I should proceed; but being persuaded that this is of real utility, it is a custom with me to do it, in the first instance, in every alarming or dangerous hemorrhage.

Opiates have been recommended in abortions, and in all cases of uterine hemorrhage; but I seldom use them, unless with a view of moderating an uncommon degree of pain, or of quieting some tumult which attended or followed the accident; having reasoned myself

self into an opinion that they do not, in these cases, deserve the high commendation which has been given them. Some pain is necessary and unavoidable, whenever an effort is made for the exclusion of any substance out of the cavity of the *uterus*. The degree of pain proves the degree of action raised for this purpose, and we should consider how far by lessening the pain we may lessen the action, and by lessening that action, by which the *ovum* would be expelled, whether we contribute to the suppression of the hemorrhage, or to the more regular conduct of the abortion.

It was said that no manual assistance was required in the management of abortions, and no rule can be more generally true; yet there are some exceptions. When, for instance, a woman who is miscarrying, with a considerable, or an apparently dangerous hemorrhage, is so far advanced in her pregnancy, that it may be difficult to decide whether we should deem it an abortion or a premature labour; it may not be safe to rely upon the use of those means which were advised for hemorrhages in general, and yet the operation of delivering would be extremely difficult and hazardous. We may then determine upon an intermediate

intermediate method, which is to break the membranes. By the discharge of the waters of the *ovum*, which necessarily follows, the distension of the *uterus* is lessened, of course the size of the open blood vessels, by which the discharge had been made, is diminished, and the hemorrhage is abated or suppressed. In consequence also of the discharge of the waters, the *uterus* acquires a disposition to act, and an ability to act with more energy, and the whole business is sooner completed. At a more early period of pregnancy, when the hemorrhage is profuse, liable to return, or of long continuance, on examination *per vaginam*, the *ovum* will sometimes be found hanging in the *os uteri*, half or more of it voided out of the cavity of the *uterus*, yet enough remaining to keep up the hemorrhage. Then, by a little motion or slight impulse in different directions, it will sometimes be cleared of the *os uteri*, and drop into the *vagina*. But great caution is to be used in this operation, for if it be done with violence, it may occasion an increase of the hemorrhage, or be a cause of future mischief.

In abortions, dreadful and alarming as they sometimes are, it is a great comfort to know that they are almost universally void of danger,

either from the hemorrhage, or on any other account. It is perhaps impossible to explain it, but the fact is undoubtedly true, that an equal loss of blood, and with apparently equal effects, should, in abortions, if properly managed, and the patient is in good health when they take place, not occasion any danger; and yet at the full period of utero-gestation be so dangerous, that one considers the patient who recovers as having a lucky escape. It is wonderful also to observe how soon women recover from the debility occasioned by hemorrhages in abortions; and how long a time is often required for their recovery after the same circumstance in advanced pregnancy. But though I reckon there is little or no danger from mere abortion, yet when the accident is in consequence of acute diseases, there is often extreme danger; for women abort because they are already in great danger, and this is aggravated by the abortion. Without a more accurate distinction we may still form an erroneous prognostic. It has been said, for example, that women who miscarry, or are delivered at the time of their having the small-pox, universally die. Now if a pregnant woman should, at any period of pregnancy,

nancy, expel her child in the commencement of that disease, perhaps from the violence of the eruptive fever, she may not only escape the danger, but go through the disease with as much regularity as if she had not miscarried. But if that period of the disease be passed without abortion, and the patient should go on to the time of the crisis, and then miscarry, the general prognostic will be too true; at least the death of the patient has followed in every case of this kind which I have seen. But since the first publication of these observations I have been informed of two cases of early abortion which have proved fatal. In the first, the patient became paralytic immediately after the hemorrhage; but the death of the second, though she was only in the seventh week of her pregnancy, seemed to be occasioned merely by the hemorrhage.

SECTION II.

UNDER this head will be included all the hemorrhages which occur in the three last months of pregnancy, because from the danger with which they are attended, they require, and from the situation of the patient, they allow of a similar treatment when required, though not with equal facility. These hemorrhages are occasioned, 1st. by the attachment of the *placenta* over the *os uteri*; 2d. by a separation of a part, or of the whole *placenta*, which had been attached to any other part of the *uterus*. This separation may be caused either by accidental violence, or by some morbid affection of the *uterus* or *placenta*, or by the approach of labour, and it sometimes happens without our being able to assign any cause, equal to the suddenness and violence of the effect produced.

Hemorrhages arising from the first cause, have been considered, and generally are more dangerous, than those from the second; but these have nevertheless sometimes proved fatal.

Hence in the estimate of the danger of uterine hemorrhages at the time of labour, it is necessary not only to discover the cause, and to regard the quantity of blood lost, but, above all other considerations, to attend to the effect produced, which is infinitely greater in one constitution than in another, and varies in all. If any individual patient therefore be brought into a state of danger by the loss of blood, great or small, it is incumbent upon us to put in practice all the means in our power for the removal of the danger. Any judgment formed upon the quantity of blood discharged, will be liable to great errors, as concealment or accident may deceive us ; not to mention that cases sometimes occur, in which there may be a greater quantity of blood lost, than can be known, either by its being locked up in the *uterus* beyond the child, when the membranes are broken, or by being effused into the *ovum*, when that has an appearance of being whole. This observation, of the necessity of judging principally by the effect of the loss of blood, deserves the most serious reflection, because, the *time when* we are to execute what reason dictates, or experience authorizes us to do, will chiefly depend upon it. It is also of great im-

portance to recollect, that those hemorrhages are far more dangerous, in which an equal quantity of blood is lost suddenly, or in a short space of time, than if it flows away slowly. The immediate injury to the constitution is greater in the former case, the vessels requiring some time to enable them to be accommodated to the quantity of blood remaining in them. A great and sudden loss of blood also creates a suspicion that the return of the hemorrhage is to be much dreaded, because if it should be equally profuse with that which has already happened, it may occasion the death of the patient, before we have time to put in practice, or reap the advantage of what we suppose to be the only method of removing the danger.

In hemorrhages the danger is indicated by the weakness and quickness of the pulse, or by its becoming and continuing imperceptible; by a general paleness and coldness of the body, and by a ghastly countenance; by inquietude, or by continual faintings; by a high and laborious respiration, and by convulsions. The two last are usually mortal symptoms; yet when patients are reduced to a certain state of weakness, they are liable to hysteric affections

fections resembling convulsions, that are equally alarming, but not dangerous.

When patients have suffered much from loss of blood, they will often have a sudden and violent fit of vomiting; and sometimes under circumstances of such extreme debility, that I have shrunk with apprehension, lest they should have been destroyed by a return or increase of the hemorrhage, which I concluded was inevitable after so violent an effort. But there is no reason for this apprehension; for though the vomiting may be considered as a proof of the injury which the constitution has suffered by the hemorrhage, yet the action of vomiting contributes to its suppression, and to the immediate relief of the patient; perhaps by some revulsion, and certainly by exciting a more vigorous action of the remaining powers of the constitution, as is proved by the amendment of the pulse, and of all other appearances immediately after the vomiting.

A tolerably just opinion may be formed of the danger of uterine hemorrhages, in advanced pregnancy, by the pain with which they are attended. An equal hemorrhage without pain, is always more dangerous than if the pain be regular and acute, and the danger is lessened

as the pain increases. In the most dangerous hemorrhages, there is no pain whatever, or none of consequence, and patients have often died, or been brought into the most imminent danger, that is, into situations from which it was scarcely possible for them to recover, whilst the practitioner was waiting for the accession of the pains of labour. The reason was before mentioned. The pain proves the degree of the action of the *uterus*, and the action of the *uterus* proves that the powers of the constitution are not exhausted. In very bad cases there is an effort in the *uterus* to act before delivery, just sufficient to cause a renewal of the hemorrhage; and immediately upon the discharge of a gush of blood, the effort, together with the little pain attending, ceases; and in this manner patients would sometimes proceed to the moment of their death, unless they were relieved by art.

SECTION III:

THOSE hemorrhages which are occasioned by the attachment of the *placenta* over the *os uteri*, are first to be considered, because they are attended with the greatest danger, and because some part of their treatment will apply in the other cases to be described.

Though the *placenta* be attached over the *os uteri*, the woman usually goes through the early part of her pregnancy without any inconvenience, or any symptom which denotes it. But when the *cervix* of the *uterus* is distended to a certain degree, or when the changes previous to labour come on, there must be an hemorrhage, because such distention, or change, necessarily separates a part of the *placenta*. This hemorrhage is often, but not always, in proportion to the space of the *placenta* attached over the *os uteri*, or to the quantity separated, for women have sometimes been in as great danger when the mere edge of the *placenta* was fixed upon the *os uteri*, as if the middle had been placed over it.

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When hemorrhages from this cause once come on, though all women would not die, they are never free from possible danger till they are delivered. As there is a very doubtful chance of the accomplishment of the delivery by the pains of labour, and experience having fully proved the insufficiency of all other methods, and how little reliance ought to be placed on them, though they ought always to be tried, it is a practice, established by high and multiplied authority, and sanctioned by success, to deliver women by art, in all cases of dangerous hemorrhage, without confiding in the resources of the constitution. This practice is no longer a matter of partial opinion, on the propriety of which we may think ourselves at liberty to debate; it has for near two centuries met the consent and approbation of every practitioner of judgment and reputation, in this and many other countries.

There is much comfort in knowing and possessing a remedy to which we can recur, with a more than equal chance of success, in any case of great and imminent danger. But though it should be allowed that the artificial delivery of the patient, in every case of dangerous

gerous hemorrhage, in advanced pregnancy, is expedient and necessary for the preservation of the life of the patient; and though the practitioner who should neglect it would be very reprehensible, yet that necessity, or that expediency which constitute the authority for the operation, and which is now clear and distinct to another, may not appear to me. Besides, should the necessity be acknowledged, and the practice approved, there may be much dispute and difference of opinion about the *time when* the operation ought to be performed.

It would be of great advantage in practice, if some mark was discovered, or some symptom observed, which would indicate the precise time when women with hemorrhages of this kind ought to be delivered. But though we do not at present know any such mark or symptom, and the determination of the time is to be made by the judgment of each individual practitioner, we may be permitted to state what we do know in the most convincing point of view.

Admitting then, in the first place, that women having uterine hemorrhages from this cause, in advanced pregnancy, are not in safety till they are delivered; that the natural efforts

are generally, or often, unequal to the expulsion of the child; that the hemorrhage can only be stayed by the evacuation of the contents of the *uterus*, giving an opportunity to the vessels to contract and to close; that these salutary effects are produced by an artificial extraction, or by actual expulsion of the child; and if it be moreover true that the operation, though performed before it is absolutely necessary, is not attended with danger, if it is performed with due care; but that if the operation be delayed beyond the proper time, it will not answer the purpose for which it is recommended; we may from these premises conclude, that a woman under the circumstance of dangerous hemorrhage ought to be delivered by art, if the child be not expelled by the natural efforts; that it is better to deliver too soon, than to delay the delivery a moment too long; and that in every case of doubt, it is a proof of wisdom to decide, and determine upon speedy delivery.

It is however seldom necessary to deliver women on the first appearance of the hemorrhage, yet that will be sufficient to awaken our apprehensions, and set us upon our guard. Nor does it often happen that a second
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or a third discharge obliges us to proceed to deliver immediately; because each return may not be in such a quantity, as by its violence to endanger the life of the patient, and such an interval may pass between the returns, as to give time and opportunity for the reparation of the mischief done by one loss of blood, before the return of the next. Nor is delivery by art necessary or usually proper when the hemorrhage is abating. There are cases however in which the quantity of blood lost, the suddenness of the discharge, and the effect produced, is such with one hemorrhage, as to make it evidently unsafe to trust a return; and whenever the countenance, and other appearances, indicate that the constitution is much impaired, by repeated, though not profuse discharges, the strength is undermined, and danger creeps on certainly, though insidiously. For we may presume that every constitution is capable of bearing the loss of a certain quantity of blood, without the instantaneous hazard of life, and this will depend upon the general state of the body. Now the body may be reduced to such a state, that there is barely a sufficient quantity of blood, or of powers, to carry on the business of life, upon
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a very nice balance, and of course the additional loss of a very small quantity, may altogether destroy the power of living, and the patient die of the hemorrhage, though the quantity of blood which shall immediately precede her death may be small ; but unfortunately she was able to bear the loss of none. We will therefore, though careful not to act rashly and unadvisedly, not only be on our guard against the effect of rapid and profuse discharges, but against those which are productive of as much danger, on account of their returns, though less in degree at any one time; we will ever call to our mind the possible evil of delay, and recollect that there is no danger in a premature delivery, if the operation be performed with prudence.

In some cases, in which it has been thought necessary to deliver the patient on account of the hemorrhage, the parts have been in such a state, that the operation could not, it was thought, be performed with safety. Whenever the case demands the operation, on account of the danger of the hemorrhage, the state of the parts will always allow it to be performed with safety, though not with equal facility ; and though it may often be necessary
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to determine speedily upon the propriety of the operation, this should not be performed rashly, but always with the utmost deliberation, even though it admits of haste. For in hemorrhages a woman may perish from two errors in practice; from delaying the operation too long, and from the rude, violent, or improper manner in which it may be performed.

Sufficient notice hath been taken of the danger of precipitating as well as that of delaying the delivery in cases of hemorrhage. With respect to the operation, the first part, that is, as far as relates to the position of the patient, the introduction of the hand, and the dilatation of the *os uteri*, has been already described under preternatural presentations. When the *os uteri* is with great caution sufficiently dilated to allow of the ready admission of the hand, and we come to the *placenta* attached over it, it is of no consequence whether we begin to separate this till we come to an edge, and go up on the outside of the membranes, which may be ruptured at pleasure; or whether we perforate the substance of the *placenta*, and conduct the hand directly into the *ovum*, though by the latter method there is rather
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more danger of losing the child. In either case, without regard to the position of the child, we must proceed to and lay hold of its feet, carefully distinguishing that they are the feet before we begin to extract them. Immediately on our beginning to withdraw the hand, which should be done with a slow waving motion, the waters of the *ovum* flow away; and while they are flowing, we must bring the hand, grasping the feet of the child lower, till by slow degrees they are brought into the *vagina*. We are afterwards to wait till the *uterus* contracts, and then gently withdraw the hand and bring the feet through the external parts. It is not improbable but we may then have the power of finishing the operation very speedily; but though the child were extracted, if the *uterus* did not act, and, as it were, follow the child, as there would be a chance of the hemorrhage returning, the child should be withdrawn according to the degree of the contraction of the *uterus*, which will be known either by the application of the hand to the *abdomen*, or by the pain. Nor is there any occasion at this time for hurrying the delivery, as the hemorrhage usually ceases as soon as the child is turned, in consequence
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of the compression made upon the orifices of the vessels, by the inferior parts of the child. If the labour-pains are at all efficient at this time, it would be proper to leave the breech of the child to be expelled by them ; but if they are not sufficiently strong for this purpose, assistance must be given, extracting by the feet only during the continuance of a pain, not with force sufficient to bring it away, but with the view of aiding the power exerted by the pains, imitating also the pains in the manner of extracting. When the breech of the child has passed through the external parts, the delivery must be hastened, as there is then danger of the child being destroyed by the pressure upon the *funis*. Yet under such circumstances there is often a better chance of preserving the child, by leaving it to be wholly, or in a great measure expelled, than by extracting it with violence.

When the child is born, if the operation was slowly performed, there is not usually any continuance or return of the hemorrhage, unless from the blood previously discharged, and locked up behind the body of the child ; but if the hemorrhage should return, the case must be managed, as will

be recommended, when we speak of a hemorrhage with a retained *placenta*. If there be no hemorrhage, and the *placenta* be retained, we must be particularly cautious not to hurry it away; but in these cases it is commonly expelled with great ease, and we have less occasion to be solicitous, because from the part where it was originally attached, it more readily admits of assistance if required.

Should nothing uncommon happen in the delivery, children will often be born alive, in cases of hemorrhage, which were extremely dangerous to the mother; and there have been many instances in which the delivery being too long delayed, the child has been extracted alive, after her death. In all cases of danger, these in particular, the safety of the parent, and the preservation of the child, are events which give inexpressible satisfaction, and adorn the reputation of the practitioner.

SECTION IV.

It was before observed, that those hemorrhages which are occasioned by the separation of a portion or of the whole *placenta*, originally attached to any part of the *uterus*, except the *os uteri*, were not generally so dangerous as those last described. But if the separation be extensive and sudden, they will be equally alarming, the real danger may be as great, and the same method of proceeding, that is, speedy delivery by art, may be required. The separation may be occasioned by great violence from external accidents in the latter part of pregnancy; or in some intense fit of fainting or of laughter; and sometimes the whole or a very large part of the *placenta* will be separated suddenly, without any accident or symptom which could give warning or apprehension, that such an event was to be dreaded. The separation of the *placenta* may then happen previously to the commencement, and it is not surprising that it should sometimes occur during any period or stage of labour.

When sudden and violent discharges of blood happen to women with child, in advanced pregnancy, from external accidents, if the patient be kept in a cool and composed state, the discharge may cease, and without any return, the patient may go on to her full time, and be delivered by her natural pains, as if no such accident had happened; though the child will often be stillborn. Sometimes however the hemorrhage will return, or it may commence in any stage of a labour, and our conduct must be regulated by the degree and probable consequences of it, and by the state of the labour when it is first discovered.

If any considerable hemorrhage should come on in the beginning of a labour, or previous to it, and if the treatment must in any measure depend upon the cause, it is necessary in the first place that we should decide whether the *placenta* be attached over the *os uteri*, or be casually separated. Before there is some degree of dilatation of the *os uteri*, be the discharge ever so profuse, and it may even at this time be excessive, I do not know that it is always possible to tell with certainty whether the *placenta* presents or not. It may indeed be conjectured that the *placenta* is there attached,
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by the cushion-like feel of the *cervix*; and when the *os uteri* is somewhat dilated, instead of the membranes, the fleshy substance of the *placenta* may be distinguished. Yet every practitioner knows how very different the state of these parts is in the beginning of labour, and how difficult it must be to distinguish between a firm *coagulum* of blood and the *placenta*; not to mention that so small a part of the *placenta* may be attached over the *os uteri*, that unless we could pass the finger completely round the circle, which is sometimes almost impossible, it could not be discovered. Taking therefore into consideration all the varieties occasioned by either of the causes of hemorrhage, and knowing that neither the performance of the operation, nor the event, are materially different, whatever may be the cause, provided the discharge and its effect are equal, we must be careful that we are not deceived by attempts to make too nice distinctions.

From a casual or spontaneous separation of the *placenta*, an hemorrhage may happen in the beginning of labour, when the *os uteri* is not in any degree dilated; or when it is dilated to a third or half its extent, for example. If

the discharge should be so great as to require some present measures for the relief of the patient, the common assistance for promoting the dilatation must be given, till we can feel distinctly the membranes of the *ovum*, which are to be ruptured. By the discharge of the waters the distention of the *uterus* will be lessened, the size of the blood-vessels of course diminished, and the hemorrhage in general immediately removed or very much abated. By the suppression or abatement of the hemorrhage, the action of the *uterus* will be rendered stronger, and the delivery often completed in a short space of time without farther assistance, especially if the patient has before had children.

But if the hemorrhage should come on in the second stage of the labour, that is, after the full dilatation of the *os uteri*, and the rupture of the membranes, when the child's head has entered and in part descended into the *pelvis*; if the discharge be of sufficient importance either to prevent the action of the *uterus*, or to bring the life of the patient into hazard, by its violence or continuance; then the assistance given must depend upon the progress which the labour has made, and the situation of the child, whether it shall be turned,

turned, as in preternatural presentations, or delivered with the forceps; or when neither of these are practicable, and the exigency of the case justifies the operation, by lessening the head of the child; that is, the life of the parent must at all events, if possible, be preserved.

Hemorrhages of this kind are also sometimes combined with preternatural presentations of the child. Then little more will be required than what may be necessary on account of the presentation, except that it be sooner decided and more speedily performed; remembering ever, that all operations in midwifery are intended to remove, lessen, or prevent natural or adventitious danger, and not to add to that which before existed.

This method of proceeding, that of accelerating the labour by breaking the membranes, recommended in this kind of hemorrhage, seldom fails to answer the intention of moderating or suppressing the discharge, and of promoting the labour in such a manner, as to remove the danger. The only inconvenience to be apprehended is, that if the hemorrhage should continue in such a degree, as to occasion the necessity of artificial delivery, the operation would be rendered more difficult on

account of the previous discharge of the waters. But in reply to this objection it may be observed, that if the *uterus* should contract round the body of the child, with so much force as to prevent the introduction of the hand to turn the child, that it will probably be expelled without any farther assistance, if we wait patiently for the return of the pains, which we may safely do when the hemorrhage is stayed. But if in common cases there be not sufficient force exerted by the *uterus* for the expulsion of the child, then there will be no great difficulty in passing the hand into the *uterus*. It must however be acknowledged that this is sometimes amongst the cases for which no precise rule can be laid down, and in which the practitioner must act according to his own estimate of the danger and difficulty.

SECTION V.

It is often a mortifying reflection, whilst we are conducting a patient through a labour rendered uncommonly tedious by the inactivity or irregular action of the *uterus*, that we can foresee after the birth of the child, an unfavourable separation of the *placenta*, which
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cannot be prevented. All that art has dictated to be done, in this case, is to suffer the body of the child to be wholly expelled by the action of the *uterus*, after the head is born; or in some cases rather to retard its final expulsion, than to use any force or hurry in extracting it. Yet no method, nor any dexterity will be sufficient in all cases to prevent, after the birth of the child, a troublesome, and sometimes a dangerous hemorrhage, the proper management of which, often requires as acute an intelligence, and as determined a conduct, as any circumstance which relates to the birth of the child. As the powers of the *uterus* or of the constitution are sometimes not exerted, or fail to answer the purpose, and as no woman can be properly or safely left till the *placenta* is excluded, it is necessary to consider this subject in a full and explicit manner.

From a review of what has been said on the management of the *placenta* by *Hippocrates*, or in the writings contained in his works, it appears not to have been the general custom to divide the *funis* before the *placenta* was expelled; that if this was retained beyond the common time, no means, or but very gentle ones, were used for the purpose of bringing it

it away; and in cases of its retention, it was usual to introduce medicated substances into the *vagina*, and to give hysteric medicines for the purpose of favouring its expulsion, which might happen on the fourth or fifth day, when it was in a putrid state. The introduction of the hand into the *uterus* for the purpose of bringing away a retained *placenta*, had not been advised or come into consideration. Whether this practice was gradually altered, or another hastily assumed, it is impossible to say; but it is extraordinary that *Celsus**, without expecting or relying upon the natural efforts made to eject the *placenta*, of which he seems indeed to have had no knowledge, should have directed the practitioner to introduce his

* Medicus deinde sinistra manu, leniter trahere umbilicum ita, ne abrumpat, dextraque cum sequi usque ad eas, quas Secundas vocant, quod velamentum infantis intus fuit: hisque ultimis apprehensis, venulas membranulasque omnes, eadem ratione manu diducere a vulva, totumque illud extrahere, et, si quid intus præterea concreti sanguinis remanet.

CELSUS, Lib. vii. Chap. xxix.

I may be permitted to observe, that many of the popular opinions, on medical subjects, are *now* the same in this country, as those entertained by the Roman writers. It is probable that they were first introduced by those Physicians and Surgeons who attended the Roman army in Britain, and not acquired by the study of their writings.

hand into the *uterus*, immediately after the birth of the child, to bring the *placenta* away, together with any *coagula* which might have been formed in the cavity of the *uterus*. These two contrary methods have, in different times and countries, been adopted and recommended by succeeding writers, but unfortunately, the practice of *Celsus* prevailed more universally. The Arabians, though fond of the study of medicine, seem rather to have preserved, than improved or extended the learning which they gained, when they plundered the eastern part of the Roman Empire. But in the fifteenth century, which may be considered as the era of the revival of learning, *Paré* published, among many valuable works, observations on the practice of midwifery, under the title, of the Generation of Man. *Paré**, who had an understanding to see, and to profit by the errors of others, seems desirous

* Not having the French edition of *Paré*, I transcribe the following from the Latin translation. *Molli si fieri potest umbilici tractu ; quod si sic non licet, obstetrix oleo inunctum manum, blande in uterum immittat, ducem secuta umbilicum, sicque comprehensas, si adhuc hæreant utero, leniter hac et illac concutiat, et sic concussas, leniter extrahat ; non autem violentius educat, ne unà sequens uterus procidat.*

of avoiding all extremes; for with an injunction not to leave the *placenta* behind, he recommends, in strong and repeated terms, the necessity of extreme caution, not to use violence, lest we should invert, or do other injury to the *uterus*; and there is no doubt but the opinion of so eminent a man must have had its influence upon the practice and writings of others, particularly of those of his own country. In the latter end of the last, and the beginning of this century, *Ruyfch* was in high reputation as an anatomist at *Amsterdam*, and he was empowered by the magistrates to inspect and regulate the practice of midwifery throughout that city. *Ruyfch* had great industry and abilities; and his pursuits in anatomy, and his office, as president of the Obstetric College, leading him to the knowledge of many bad consequences which followed the common method of managing the *placenta*, particularly the inversion of the *uterus*, he laboured the point with great knowledge and ingenuity in many parts of his works; discountenanced the practice, and forbade the *placenta* to be extracted hastily, choosing clearly to run the hazard of the evils which might follow the imperfections of nature, rather than
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of those which would be incurred by the harsh and violent methods then in use *. For many years after the time of *Ruyfch*, the practice of *Celfus* was followed in this country, by some even down to this time, but not universally; for in a large manuscript, written on the subject of midwifery by Dr. *Percival Willoughby*, Physician at *Derby*, in the time of the Civil War, a copy of which came into my possession by the kindness of my very able and intelligent friend, Dr. *Kirkland*, there is this observation; *the afterbirth oft cometh of it selfe, yet it is not amisse to assist nature for the producing of it. There bee some midwiues, that never offer to fetch the afterbirth, but suffer nature to expell it, and their women have done well.* The

* Prudentius ergo relinquere placentam, donec natura hanc separat, aut donec laxata, magisque libera, manu evel-
lere hanc detur, quam lethali festinatione occidere ægram.
Putetne quis, boni quid contigisse trucidatæ mulieri, quod
mortua sit sine placenta? Quæ cum illa poterat vixisse!
RUYSCH. Advers. Anat. Dec. Secunda.—Some allowance
is to be made for the arguments of *Ruyfch*, which were in-
tended to overfet the bad practice of his time. For if the
placenta was to be left entirely to nature in all cases, there
would not be wanting many examples of mischief and fa-
tal consequences from the very method which he recom-
mends.

practice

practice of extracting the *placenta*, immediately after the birth of the child, was nevertheless common in this country. It was taught in the second school of midwifery established in *London* by *Chapman* in 1733; by Sir *Richard Manningham*, in the public establishment set on foot for the purpose of teaching midwifery, in the *St. James's Infirmary*, in the year 1738; and by *Smellie*, who I think came to *London* in the year 1742. Soon after this time, in 1746, Dr. *William Hunter* began to give lectures in anatomy; as an appendage to which, he added a certain number of lectures, on the anatomy and physiology of the gravid *uterus*, interspersed with many practical observations. With a mind composed and finely turned for observation, with a judgment exceedingly correct, and with unwearied application, Dr. *Hunter* soon acquired very high and deserved reputation; and the great character he established in the practice of midwifery, for which his person and manners were admirably well calculated, and in which he was soon and very much engaged, gave a more than usual authority to what he advanced on the subject. * Being an associate

* This account I had from Dr. *Hunter* himself.

with Dr. *Sandys* for the care of the lying-in department in the *Middlesex* Hospital, he proposed to Dr. *Sandys* that they should try the event of leaving the *placenta* to be expelled by the action of the *uterus*, without attempting to give any assistance. After much consideration and some delay, from the dread of censure, they agreed upon the trial ; and in the first instance, the *placenta* remained twenty-four hours. No ill consequence however followed ; and the trials being repeated with success, it became a very frequent, and almost general rule to leave the *placenta* to be expelled without any assistance. Several untoward and some fatal accidents having followed this practice, it was altered ; at least it became necessary to admit many exceptions ; and after a variety of changes and observations, I believe we are at length arrived at a state of practice, with regard to the management of the *placenta*, that will with difficulty be improved ; a practice founded on common sense and observation, that the *placenta* ought to be, and is generally expelled by the action of the *uterus*, in the same manner as the child ; feeling ourselves at liberty, and called upon to assist, only, when that action

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is not equal to the purpose, or when dangerous circumstances demand our assistance.

In the course of ten or twenty minutes after the birth of the child, sooner or later, according to the condition of the patient at the time of her delivery, the action of the *uterus* returns for the purpose of expelling the *placenta* and membranes, which collectively have the common name of secundines, or *Afterbirth*. This action is indicated by pains in all respects like those the patient had before the child was born, excepting their degree. When these pains come on, it is customary to take hold of the *funis*, by which if we pull slightly, the evacuation of the *placenta* out of the *uterus* will be forwarded, without the risk of doing any kind of injury to the *uterus*. The *placenta* and membranes formed a complete lining to the *uterus*, but the *placenta* coming away first, and then the membranes, the whole is usually expelled in an inverted state; but not always, as the separation of the *placenta* is in some cases so speedy, that it drops into the *vagina*, and pushes the membranes before it. But though the *placenta* is generally expelled in a short time after the birth of the child, and with the
return

return of a few pains, it is sometimes retained, on account, 1st. of the inaction of the *uterus*; or 2d. of the irregular action of the *uterus*; or 3d. of a scirrhus adhesion of the *placenta* to the *uterus*. It may be retained beyond the usual time, without any hemorrhage, but whenever there is a discharge of blood, the whole or a portion of it must have been previously separated; and the hemorrhage may continue, or increase, or cease and return in these cases, till the *placenta* is extracted or expelled. Every discharge of blood at that time, properly speaking, is an hemorrhage, but to this term, together with the other parts of the definition, one annexes the idea of such a loss of blood, as, by its continuance or degree, may be apprehended to occasion danger.

A very long continued, and strenuous exertion of all the powers of the constitution, is often required for the expulsion of the child. These powers, though generally adequate to that effect, sometimes fail before it is accomplished. But experience having shewn, that difficulties, to our apprehension insurmountable, are to be overcome by the natural efforts, both reason and humanity discourage all hasty

determinations to pursue such measures, as may affect the safety of the mother or the child. But as there is a leaven of imperfection in all human actions, animal as well as moral, we may sometimes be led, by the most commendable motives, to defer that assistance, which any particular case may require, so long, that after the birth of the child the patient may be in such an exhausted state, and the *uterus* so completely divested of all power of farther action, that it is neither disposed nor able to separate or eject the *placenta*; and she is scarce able to support the necessary consequences of her delivery. The mere debility of the patient, is therefore often a reason why we ought to wait, without making any attempts to hasten the separation or extraction of the *placenta*; as an immediate separation, natural or artificial, would be an addition to the danger which she was before in. Sometimes also, when a labour has gone on with great activity, there is, from the moment of the expulsion of the child, a total inaction of the *uterus*, for which no reason can be assigned. But if the time which passes between the birth of the child and the expulsion of the *placenta*, be employed in composing the pa-

tient's mind, in cooling her when overheated, or in recovering her when much fatigued and wearied with the preceding circumstances, in short, in restoring her to her natural state, it generally happens, and we may reasonably expect the action of the *uterus* to return, and make its efforts to throw off the *placenta* in the usual manner, though more time may be required. But during this time of waiting, should an hemorrhage come on, we must apply ourselves to the use of those means, by which the separation and exclusion of the *placenta* may be forwarded; there being as justifiable a reason for the removal of the *placenta*, in a case of hemorrhage equally urgent, when that is retained, as there was for the extraction of the child with the same circumstance. But every discharge of blood is not a sufficient reason for the introduction of the hand, or for the artificial extraction of the *placenta*, as some degree of hemorrhage very frequently precedes and accompanies both its separation and exclusion. We must therefore form a judgment of the necessity of extracting the *placenta*, by the opinion we entertain of the hemorrhage, being so profuse as to endanger the life of the patient by its continu-

ance or probable increase. Sometimes also *coagula* are discharged in considerable quantities, which from their appearance may be suspected to have been formed long before labour, by an effusion of blood into the *ovum*, from the rupture of some vessel which ran over the surface of the *placenta*; which *coagula* do not indicate any danger. It is not exactly in order, but it must nevertheless be observed in this place, that when I have been attending women who were prone to violent hemorrhages after the birth of the child in former labours, I have made it a rule to keep them in an erect position till the waters were discharged by the spontaneous breaking of the membranes, and the child was on the point of being born. By this method it appeared clearly to me, that the *uterus* acted more favourably, the *placenta* came away more naturally, and the quantity of blood lost was very much diminished.

When the *placenta* is not separated or ejected in due time after the birth of the child, with or without an hemorrhage, means must be used for the purpose of its exclusion or extraction. If there be no hemorrhage, or none of importance, it is commonly better to wait than to interfere, because slight attempts to extract the
placenta

placenta may be just sufficient to occasion or increase an hemorrhage, and not equal to the extraction of the *placenta*; and this conduct is a very frequent cause of a degree of hemorrhage which lays us under the necessity of introducing the hand into the *uterus*, in order to bring away the *placenta*, which operation would not otherwise have been required. But after a certain time, which is too indefinite a term if we were authorised to use one more precise, but certainly not within one hour after the birth of the child, unless we are compelled by hemorrhage or some untoward symptom, gentle means are to be used to favour its exclusion; and the most gentle must be first tried, as by giving some actually warm and temperate cordial, which may renew the disposition in the *uterus* to act, by change of position, or, by making a moderate pressure with the expanded hand upon the *abdomen* to aid the action of the *uterus*; or by pulling moderately by the *funis*, to try whether it is disposed to come away. As the term *moderate* has no precise meaning, and what I call violent, may by another be called moderate, we will say that so much force is on no account to be used in pulling by the *funis*, as to incur the risque of tearing it from the *placenta*, or of inverting the *uterus*;

and that it is better to make it a general rule to prefer the introduction of the hand into the *uterus*, to separate and bring the *placenta* away, than to have the chance of either of those accidents. It is however to be observed, that when the hand is introduced for that purpose, there is not always a necessity of acting; for the very irritation thereby occasioned, will often excite the *uterus* to its natural action, and the *placenta* be both separated and expelled, as will be recollected by every one accustomed to this operation. But the hand ought never, on any account, to be introduced into the *uterus*, except as a matter of necessity, and then with the utmost care and tenderness; and when introduced, should never be withdrawn, till the end for which it was introduced is, if possible, accomplished.

To promote the separation and exclusion of the *placenta*, the application of the half-closed hand to the *abdomen*, so as to make a moderate pressure, is sometimes of use by aiding the *uterus* in its contraction; but this assistance cannot be given in the worst cases, that is, when the *uterus* is not at all contracted, or contracted irregularly. The respiration of the patient has also an evident effect upon the

uterus

uterus and *placenta*, of which we shall be sensible, if we retain the *funis* in our hand, in the act of expiration, when it descends, and in the act of inspiration, when it is somewhat retracted. By supporting the *funis* with just so much force as will prevent its retraction in the act of inspiration, we shall soon be sensible that the *funis* is lengthened, which will prove that the *placenta* is descending; and the purpose of extracting the *placenta* will be completed, without the use of any other means: but this method requires much time and attention. Sometimes also the exclusion of a descending *placenta* may be favoured by pressing it, with one finger carried along the *funis*, towards the *sacrum*, in such a manner, as to bring down an edge instead of the whole mass.

In all cases of dangerous hemorrhage, when the *placenta* is retained, it was said to be equally justifiable and necessary to extract the *placenta*, as it was to deliver the woman of her child under the same circumstances. But this general rule requires explanation, and some skill in the application. When there is a present hemorrhage, so important as by its violence or continuance to threaten danger, the *placenta* ought to be immediately extracted. This

is not an opinion, but a rule of practice. But if there has already been an hemorrhage, so profuse as to occasion danger, and the common consequences of loss of blood, as fainting and the like, have already followed; the *placenta* ought not then to be extracted, nor the patient disturbed, nor any change made, till she is revived from her extreme debility; as the danger would be thereby increased, and the patient die, during or immediately after the operation, as I have seen and known in too many instances. In other words, the extraction of the *placenta* is to be considered as a remedy for a present or an apprehended dangerous hemorrhage, but not for one which has already happened.

In cases also in which there is no hemorrhage, if the *placenta* is not ejected, or if no efforts are made by the *uterus* for that purpose, a time will come, when we must determine upon its extraction, or leave it behind; and the latter being unsafe and unjustifiable, the mere retention will be sufficient authority for us to extract it. Upon this point there can be no dispute, except as to the time, and we will say, leaving the matter somewhat at large, that if the *placenta* is not expelled at the end of two hours from the birth of the child, that
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it ought to be extracted. I can however recollect many examples of a retained *placenta*, without a hemorrhage, to which I have been called at any time within twelve or even twenty-four hours after the birth of the child, in which the *placenta* has been very easily managed.

Whenever we have determined upon the necessity and propriety of extracting the *placenta* by art, we must proceed in this manner. The patient being placed in a convenient position, as when we deliver with the *forceps* or *vectis*, and every thing in order, the *funis*, which is our guide, is to be held with a moderate degree of tightness. The external parts are usually in such a state as not to require any dilatation; but if that should be necessary, it must be done tenderly, and in the manner before directed with the right hand or left, as may be found most convenient. When the hand is in the *vagina*, the *funis* is to be slowly followed into the *uterus*, which though in a state of total inaction before, may then be irritated to a sufficient degree of action, to separate and expel the *placenta*, without any farther assistance on our part. But if the spontaneous action of the *uterus* should not come on, we must proceed with the hand to the *placenta*, which may
either

either adhere with its whole surface, or it may be partly, or even wholly separated and lying loose in the cavity of the *uterus*. Should there be a total adhesion, we must search for the edge of the *placenta*, on the outside of the membranes, cautiously distinguishing between the *placenta* and the *uterus*. When the edge of the *placenta* is raised, the further separation must be made with the blunt ends of the fingers, and the closer and firmer the adhesion, the slower the separation is to be made; not proceeding rashly or affecting dexterity, but giving our heads time to guide our hands, as if the operation was performed under inspection. By slow proceeding, and by demurring a short time if we meet with more than ordinary difficulty, the separation will be perfected; or, when the greater portion is loosened, if we grasp it slightly in the hand, and bend it backwards, the remaining part will often peel from the *uterus*, without trouble. Whether on the introduction of the hand we found the *placenta* separated, or whether it was necessary to separate it, we are not to extract it immediately, but to wait till the *uterus* begins to contract, and then to withdraw the hand including the *placenta*,
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more quickly or slowly, according to the degree of contraction; for the hemorrhage may not be occasioned because the *placenta* was retained, but because its retention, or some other cause, hindered the contraction of the *uterus*. If there be no action of the *uterus* whatever, it is of service to throw the fingers gently backwards against the sides or *fundus* of the *uterus*, to irritate and bring on its action, previous to our withdrawing our hand. When the *uterus* is perceived to act, then gently withdraw the hand, till the *placenta* is brought into the *vagina*. Whatever motive induced us to introduce the hand to separate the *placenta*, when it is brought into the *vagina*, it ought to be suffered to abide there, till the patient is composed, and recovered from her fatigue, and till the *uterus* has had time to contract in such a manner, as to prevent the return of the hemorrhage, at least in a dangerous way. For many years I have made it a rule to leave the *placenta*, naturally or artificially separated, to abide in the *vagina* one hour, after it was voided out of the cavity of the *uterus*; and I am convinced by this method, there is an infinitely less chance of an ensuing hemorrhage, on its coming or being brought away, and less

less afterpain. For the blood discharged in consequence of the separation of the *placenta*, usually forms into *coagula*, which are collected in the membranes as in a net, and the *uterus* is left perfectly void of any thing which can become the cause of any considerable pain.

With regard to those cases in which the *placenta* is retained by the irregular action of the *uterus*, there is generally some degree of hemorrhage, and often a very profuse one; tho' sometimes there is no discharge, or none of importance, only a retention of the *placenta* beyond the common time of its expulsion. When all the parts of the *uterus* act with equivalent force at the same time, the united action contributes to the expulsion of whatever may be contained in its cavity. But if one part, the inferior for instance, should act, when the other is at rest, a contrary effect might be produced. The forms which the *uterus* may assume in consequence of this irregular action, are innumerable, but the most common is the longitudinal, which is produced when all the parts, except the *fundus*, act; or the hour-glass form, when the middle of the *uterus* only acts, by which it is divided as
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it were into two chambers or cavities. When it was the custom to bring away the *placenta* immediately after the birth of the child, two reasons were assigned for the practice; first, that it was an extraneous mass, which became pernicious every moment it remained; and secondly, that if not immediately extracted, it would be almost impossible to bring it away, the *os uteri* closing in such a manner, as absolutely to prevent the introduction of the hand for the purpose of extracting it. Both these opinions are proved to be groundless, for the *placenta* may remain many hours or several days without doing any mischief to the *uterus*; and the opinion of the *os uteri* closing so soon after the birth of the child, is without foundation, as that seldom or never happens: what has been esteemed the natural closing of the *os uteri*, being in reality an irregular contraction of some portion of the *cervix*, from which we are assured no harm and little additional difficulty can arise*.

When

* Scire enim est post natum infantem, in utero nullum reperiri tale os ut olim fuerat: sed ita omnino se res habet, ut in bursa nummaria, quæ loris transmissis contracta, rugosum

When the *uterus* is contracted thus irregularly, as the *placenta* cannot be expelled, it must be extracted by art, whenever, on account of a hemorrhage, or of the time that is past, it may be thought expedient or necessary. There is no way of judging of this kind or degree of contraction, unless by the uncertain information we may acquire by the application of the hand to the *abdomen*, till we introduce our hand into the *uterus*. Before this operation it is always proper to try whether the *placenta* may not be disposed to come away by any of the gentle means before recommended. On the failure of these, and being fully convinced of the necessity, the hand must be conducted in the manner before mentioned, till we come to that part which is partially contracted, whether it be at the *cervix*, or in the cavity of the *uterus*. The hand must then be reduced into a conical form, in the way directed for the dilatation of the *os uteri*, or external orifice. Should the spasm

sum os format ; laxatis autem hinc vinculis, ubique æque lata est expansa. RUYSCH. Advers. Anat. Dec. Secunda.

The tenth chapter of the second Decade is full of useful observations regarding the management of the *placenta*, given in very honest and animated language.

be in such a degree as to make a perfect closure of the *uterus* round the *funis*, one finger must be first insinuated along the *funis*, and this being turned with a semirotatory motion, will soon make room for a second, and so on till all the fingers, in a conical form, may be admitted. The dilatation is sometimes to be made in opposition to a very firm contraction, yet it must be done steadily and resolutely, though not rashly or violently. Before the hand is passed beyond the contracted part, this must be amply dilated, otherwise it will clip round the wrist, and impede the subsequent part of the operation. When the contracted part is amply dilated, the hand must be carried forwards into what may be called the upper chamber of the *uterus*, in which the *placenta* is contained. Whether this be separated wholly or partially, or be yet adhering, we must proceed according to the method before mentioned. Immediately upon the separation of the *placenta*, the hand containing it is to be drawn out of the upper cavity, to that part of the *uterus* which was before so closely contracted, and held there, till by the pressure behind, we are sensible of the action of the *fundus*. The hand containing
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the *placenta* is then to be withdrawn by slow degrees, till it arrives in the *vagina*, where the *placenta* must be suffered to remain for an hour; or we may wait till it is wholly expelled by the pains, in order to avoid the hazard of a subsequent hemorrhage.

When the *placenta* is either expelled by the action of the *uterus*, or extracted by art, it should be a general rule to apply the hand to the *abdomen* afterward, that we may be assured the *uterus* is not inverted.

The natural attachment of the *placenta* to the *uterus* is of such a texture and kind, as very readily to admit of separation. But if that part of the *uterus* to which the *placenta* adheres, should be in a scirrhus or morbid state, the *placenta* will partake of the disease. On the examination of the *placentæ* of different women, there are not unfrequently found morbid appearances, some being disposed to a putrid, others to a scirrhus or cartilaginous state; while in others there is a degree of ossification in the vessels, and sometimes perfect concretions. The adipose substance often found upon the *placenta* in large quantities is not of any importance. The difficulty of the separation will depend partly upon the *placenta* itself,

itself, and partly upon the state of the *uterus*.

When there is found on the introduction of the hand into the *uterus*, an uncommonly firm adhesion of the *placenta*, a perfect separation will be extremely difficult, and perhaps sometimes impossible, without the hazard of doing injury to the *uterus*. There is no security in these cases, but by taking time in the operation, confiding chiefly in slow proceeding, both for the completion of our purpose, and the avoidance of mischief. It has been said that it is more justifiable to leave a portion of the *placenta* behind than to continue very strenuous efforts to bring the whole away, as these may give unbearable pain, and become the cause of immediate or subsequent injury. It must however be acknowledged that it is always a very desirable thing, to bring away the *placenta* wholly and perfectly, not only for the satisfaction of friends, but for the real good and interest of the patient. Even the membranes should be managed with caution, for though a portion or the whole of these might be left without danger, they occasion a *fætor* in the discharges, and often so much pain as to create a suspicion of disease. But without meaning to give authority to

negligence, or misconduct, to rashness, or violence, we may suppose a situation in which we must submit to some evil, and in which all that is in our power is, to choose the least. There can then be no doubt but that it is a less evil to leave a portion of the *placenta* behind, than to do any positive injury to the *uterus*, in striving to bring it away. For it has been found when a portion of the *placenta* was left behind, that the hemorrhage has ceased and not returned, and that this portion far sooner decays, or is more readily digested or expelled, than the whole. I once saw an instance of a whole *placenta* retained till the fifteenth day after the birth of the child, and then expelled with little signs of putrefaction except upon the membranes, the whole surface, which had adhered, exhibiting marks of a fresh separation. The recovery of this patient was very fortunate, but I have seen several other cases of the same kind terminate fatally. It is a conclusion generally made, though not always warranted, that if a woman dies with a portion of the *placenta* retained, that her death ought to be attributed to it; yet it should be considered that there may have been previous disease in the *uterus*, and that the event may have been really

really occasioned by violent, though unsuccessful attempts to bring it away, and not by the retention. Sometimes the danger of these cases is known to the practitioner only, who is obliged to act according to exigencies, for which he may not be particularly prepared; but if he has before acquired a just knowledge of the principles of the art, determines not rashly, and proceeds slowly, he will not do any thing for which he can be justly blamed, and will generally be successful.

The *funis* is commonly inserted about one third of its space from the edge of the *placenta*, sometimes in the centre, and now and then the vessels branch off before it reaches the *placenta*; and the ease or difficulty with which this may be brought away, somewhat depends upon the insertion of the *funis*. The chance also of tearing the *funis* away rests chiefly upon the force used to extract the *placenta* by it, yet if it is inserted fully into the *placenta*, and is in a sound state, the force which it can bear, is infinitely greater than can be exerted without the hazard of inverting or doing other injury to the *uterus*. But if the *funis* is in a putrid state, or if the vessels branch off too soon, it may be torn away with a very small

degree of force ; and in the latter case it can only sustain what a single branch of the vessels can bear. Hence in a cautious extraction of the *placenta*, one is sometimes sensible of a sudden yielding or jerk in the *funis*, which, if the same force be continued, will be repeated, till at length the *funis* comes away, and the *placenta* is left in the *uterus*. Great circumspection and slow proceeding will usually prevent this accident, but if it should happen in our own practice, or we should be called to assist others, we must determine whether the case will allow of further waiting, or whether there be a necessity of bringing the *placenta* away immediately, by introducing the hand into the *uterus*. If there should be occasion for the latter method, which, if consistent with the safety of the patient, ought always to be avoided, we may consider the inconveniencies produced by the want of the *funis*, which, when it remains, serves as a guide to conduct the hand, helps moreover to keep the *uterus* steady, and to bring down the *placenta* when separated. The former of these will not be of much consequence to a person accustomed to the operation, and the latter will be lessened, if an assistant makes a judicious pressure upon

upon the *abdomen* with both his hands. Some disadvantage will necessarily arise from this accident, we should therefore be careful to avoid it when in our power; but though a little embarrassment may be occasioned, the importance of the disadvantages produced by the separation of the *funis*; has, I believe, been much over-rated.

SECTION VI.

THE hemorrhage which follows the expulsion or extraction of the *placenta*, may be a continuation of that which came on before the birth of the child, or between the birth of the child and the expulsion of the *placenta*; or it may be unconnected with either of these, but merely a consequence of the separation and exclusion of the *placenta*. This has usually been described by writers as an immoderate flux of the *lochia*, but is with more propriety arranged under the class of hemorrhages; and though not so generally dangerous as either of the varieties last described, it is often alarm-

ing, and, under particular circumstances, has sometimes proved fatal.

The discharge of blood which follows the separation and exclusion of the *placenta*, varies in different women, being in some very small, and in others there is, after every act of parturition, a disposition to a very profuse hemorrhage, which suddenly reduces the patient into a frightful state. It is a popular opinion, that the greater these discharges are at the time of delivery, the safer women will be, from the chance of diseases during childbed; and this opinion very much lessens the terror of the bye-standers, when discharges come on with great profusion. But the practitioner who knows the possible effect of sudden and violent hemorrhages at this time, especially in patients who were before much weakened, cannot feel at his ease, though supported by the general experience of their being very seldom dangerous. Nor is the opinion true, that the greater the discharge, the safer the patient will be; for whatever weakens the patient extremely, must render her more liable to diseases of various kinds in childbed.

It has often been a matter of great surprise to me, when I have seen a patient bear a sudden

den discharge of an enormous quantity of blood, on the coming away of the *placenta*, without fainting or shewing any signs of the common consequences of great loss of blood; but it may be explained in this manner. Should every drop of blood which circulates in the *uterus*, be discharged in an instant, it would be of no immediate consequence to the patient, the very existence of the *uterus* not being necessary for her life. When all this blood is discharged, if the *uterus* should contract speedily, so that the vessels should be reduced to a small size, there would not be a continuance or return of the hemorrhage, and the patient would exhibit no signs of suffering from that which had happened. But after the discharge of the blood contained in the vessels of the *uterus*, as before stated, if there should be no contraction of the *uterus*, then the vessels remaining of the same size, and the communication between the body and *uterus* being preserved open, as in pregnancy; the vessels of the *uterus* would be replenished from the constitution, and the same effect would be produced in the patient, as if it were really lost. Should then this second quantity of blood supplied to the *uterus* be

discharged, and another be claimed from the constitution, then, according to the quantity demanded, and the number of times the demand was made, would of course be the danger of the patient. In some cases the hemorrhage does not follow the extraction of the *placenta* immediately, but comes on after a certain time; and then it may be supposed that the communication between the body and the *uterus* was closed, but not being confirmed, was opened again by some effort too soon made, or more violent than the situation of the patient could endure. These circumstances point out very clearly the necessity, in the management of uterine hemorrhages, of ever remembering, that the danger attending them is lessened, and the safety of the patient secured, only, by a proper contraction of the *uterus*. Hence in hemorrhages of this kind, however vehement, the accession of uterine pain immediately proclaims that the danger is past.

With respect to this variety of hemorrhage, two things are to be considered; 1st. by what method or means it is to be prevented; 2d. how it shall be remedied, when it does exist.

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When the hemorrhage depends upon the imperfect or irregular action of the *uterus*, excited for the end of expelling the *placenta*, it may not be in our power to regulate these. But as far as relates to the force used in the separation, or hurry in the extraction of the *placenta*, we may always act reasonably and calmly, and proper conduct will generally insure success. It was before advised to leave the *placenta* in the *vagina* for one hour after its exclusion from the *uterus*, in common cases, unless it were sooner expelled by the natural efforts. Objections have been raised to this, because it confines the patient to an uncomfortable situation for a long time; and it is said to be cruel to leave her friends under anxiety, with the delivery incomplete, when we have the power of readily bringing the *placenta* away. Now, if we are speaking of a case of real or presumed danger, the argument of uncomfortableness is not to be put in competition with a conduct, on which the increase or diminution of that danger may turn; nor does the censure of a good action make it degenerate into a crime, or convert that, which is in its own nature honest and intelligent, to cruelty. On the contrary, it
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may be the height of tenderness in me to encourage the patient to bear a small degree of present pain or inconvenience, by which her safety is insured, rather than by an officious interference, to add to the hazard, by complying with the solicitation of those who are not qualified to judge. When the *placenta* is brought into the *vagina*, we have then the absolute command of it at our pleasure; but the very ease with which it could be brought away, is often a good reason why it should be suffered to abide, as it proves that there is no natural contraction of the parts for its exclusion. In what other manner a *placenta* remaining in the *vagina* may contribute to the prevention of an hemorrhage, except that by the irritation made upon the *os uteri*, it urges the *uterus* to act, it may be hard to say; though I am convinced of the benefit thence derived. Nor have I been satisfied with leaving it one hour in that situation, when attending patients who have been prone to an hemorrhage in former labours, but have prolonged the time to two or more hours, unless it should be in the mean while ejected by the pains, which proving the action of the *uterus*, would give an assurance of safety. Moreover, after wait-
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ing so long, I withdraw the *placenta* very gently, not increasing the force on account of every little obstacle, but demurring and waiting longer. Even after the *placenta* is wholly excluded, if the membranes stick, I wait yet longer, and proceed more slowly, knowing that a few minutes occasion a difference between the loss of one, and seven or eight ounces of blood, which sometimes may be of the utmost importance.

When we have the management, or are called to cases of preceding or present hemorrhage, the *placenta* being extracted, it should be an unfailing general rule to examine the patient, to be sure that the *uterus* is not inverted; or perhaps by slight irritation about the *os uteri*, to bring on its action. Then all the means before recommended for the suppression of hemorrhages, are to be put in practice, speedily and strenuously; and we are also to endeavour to promote the action of the *uterus*, if at rest, or to strengthen it if feeble, by moderate pressure upon the *abdomen* with a very cold hand.

On the application of the hand to the *abdomen*, it is sometimes clear, from the volume of the *uterus*, though contracted, that there
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are large *coagula* contained in its cavity. We have been directed by gentle dilatation of the *os uteri*, to give these an opportunity of coming away, or even to introduce the hand for that purpose, as by their continuance, they are supposed to keep up the distention of the *uterus*, and to occasion a continuance of the hemorrhage. This method may answer the purpose for which it is recommended, but it is not necessary; for I have never practised it, nor ever troubled myself with the state of the *uterus*, unless it was inverted, after the *placenta* was brought away; but have left whatever *coagula* it contained, to be expelled by its own action.

The fainting which follows hemorrhages was considered, as an effect produced, or as a remedy provided for their suppression. It was also said that the medicines given, or the means used, did service, according to the degree of chillness they occasioned, and the slackness of the circulation which followed. We were cautioned not to remove this faintness by the exhibition of cordials, lest with the return of the circulation, there should be a renewal of the hemorrhage; at least till we had given sufficient time for the contraction of the vessels and other circumstances to take

place, before the patient revived. But when the patient becomes cold, and we presume those effects are produced, nourishment and mild cordials must be given in small quantities often repeated*. The *fulap. Vitæ* of *Bates*, which is composed of warm wine and the yolks of eggs, with the addition of a few drops of oil of cinnamon, is an admirable medicine on these occasions; but I must confess that the best and most general cordials are very cold air and cold water; and the strongest stimulant in extreme cases, is to sprinkle the face repeatedly with cold water, which the patient, sensible of the benefit she receives, would often require to be done with great earnestness.

On the same ground on which these medicines are advised, opiates, though in some cases they may prevent, were esteemed improper, during the continuance of an hemorrhage, and they certainly ought not to be given too freely when the patient is reduced

* *Chapman* mentions a compliment paid him by Sir *Richard Blackmore*, in a case of this kind, which shews great accuracy of distinction. If, said Sir *Richard*, you had used less cold applications, this patient would have died from the loss of blood; and if you had continued them longer, you would have extinguished the powers of life.

to a state of great weakness. Above all, she is not to be disturbed, or raised to an erect position, but the small portion of the principle of life is to be carefully husbanded ; and there is often a power of living in a quiescent state, or in a recumbent position, when the patient would be destroyed by the least exertion. Whether an hour or a day be required for this purpose, after a profuse hemorrhage, the patient ought not to be raised, or even moved, before she is quite revived, and then with the utmost care and circumspection ; and through want of attention to this matter, sudden death has sometimes happened, when we were not suspicious of danger. When patients have been reduced to a very low state, I do not hold it proper either hastily to replenish the emptied vessels or to stimulate them to strong action.

It is lastly to be observed, that in the violent and pertinacious head-ache, and other nervous complaints, which follow profuse hemorrhages, and sometimes continue for many weeks, it will be of great service to procure two or three stools every day previous to the exhibition of the *bark*, or other tonic medicines, though the patient be pale and in a weak state.

state. For the relief of the head-ache, cold applications to the temples, as white of egg mixed with powdered *Bay Salt*, or crude *Sal Ammoniac*, keeping the feet and legs warm, will sometimes also be very useful.

These observations I have written with great pleasure, hoping they may be of service; and I may recommend the method founded on them with some confidence, having in practice seen innumerable instances of its good effects.

ANOMALOUS, OR COMPLEX LABOURS.

O R D E R II.

LABOURS ATTENDED WITH CONVULSIONS.

SECTION I.

THE rules given by different writers for the management of labours attended with convulsions, seem to have been founded on less certain principles, and to have been less confirmed by experience, than those which have been given for almost any other cases which occur. These rules have nevertheless led to two methods of practice, offered with sufficient confidence, though diametrically opposite to each other. According to the first *, which

* La convulsion est un autre accident qui fait souvent parir la mere et l'enfant, aussi bien que la perte de sang, si
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which has been most generally approved and followed, it was deemed indispensably necessary to deliver the patient by art, as expeditiously as possible, to free her from the cause of her impending danger. But according to the second, it being presumed that the convulsions appertained to the labour as symptoms, this, if natural in other respects, was to be suffered to go on without interposition, as if there were no convulsions*; while we were engaged in using the means of preventing their return, or of lessening the effect which might be produced by them. Whatever has been done or omitted, has occasionally been blamed or regretted, and, in consultations on cases of this kind, I have generally observed, that the person who advanced his opinion in the boldest manner, prevailed on the rest to acquiesce in his sentiments; the records of experience having been thought insufficient, or not so duly weighed, as to justify our forming an irrefragable rule of practice.

la femme n'est tres promptement secourue par l'accouchement, qui est le meilleur remede qu'on puisse apporter a l'une et a l'autre.

Mauriceau, vol. i. cap. 28.

* Naturæ, partus quod cætera sanus, relinqui potest.

Roederer, Element. Art. Obstetric. Aphorism. 679.

The true puerperal convulsions have not been accurately described, yet there are some peculiarities in the symptoms preceding their appearance, and in the convulsions or the manner of their return, which distinguish them from every kind of hysteric symptom, and from convulsions proceeding from other causes. Together with the symptoms of the epilepsy*, which they very much resemble, there is not unfrequently a *stertor*, which has been considered as peculiar to the apoplexy, or the patients are obstinately comatose. With the foaming at the mouth there is also a sharp hisping noise produced by fixing the teeth, and by the sudden motion of the under lip, as if attempts were made to retract the *saliva* back into the mouth; and by this noise I have generally been able to discover the state of the patient, though she was in another room. The intervals between the

* Epilepsia—Agitatio convulsiva universalis, chronica, cum oppressione sensoriorum, exituque spumæ ex ore. VOGELIUS.

Epilepsia—Musculorum convulsio cum sopore. CULLEN.

Convulsio—Musculorum contractio, clonica, abnormis citra soporem. CULLEN.

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| Spec. 2. | 1. Idiopathica. |
| | 2. Symptomatica. |

convulsions,

convulsions, which are of shorter or longer duration according to the advancement of labour, evidently depend upon the action of the *uterus*, and when they abate, the patients sometimes seem as if they were awakened by surprise, and soon recover the use of their faculties; but, at others, they lie in the intervals in an insensible state, as if they were truly apoplectic, which they are not, though there have been instances of patients dying in the first attack, when there was no token of labour, as far as could be judged by the state of the *os uteri**. By the degree of the derangement

* In the examination of many women who have died in convulsions, I have never seen an instance of effusion of blood in the brain, though the vessels were extremely turgid; but it is remarkable, that in all, the heart was found unusually flaccid, and without a single drop of blood in the auricles or ventricles; and in several there instantly appeared many large livid spots on the extremities and surface of the body. They all died immediately after the *diastole* of the heart.

A woman in labour was put to bed, and made an effort to change her situation. She died instantly in the act of moving.

Another was in such a situation, that the child was expected to be born the next pain. She threw herself back, and died instantly.

ment in the intervals between the convulsions, the danger of the patient is to be estimated, as well as by the violence of the fits, or by the symptoms which preceded them.

It will be convenient to arrange what I have to say farther on this subject, in the following order: first, to enumerate the reputed causes of convulsions; secondly, the symptoms which precede their appearance; thirdly, the means of preventing them; fourthly, the treatment which may be requisite when the patient is actually in convulsions; and, fifthly, on the delivery by art.

Another raised herself in bed to take nourishment, about half an hour after delivery. She fell back and died immediately. She was opened by Mr. *Jenner*.

There was no effusion of blood in the brain, or any other part in any of these; but the heart was found flaccid, perhaps somewhat enlarged, and not a drop of blood in either the auricles or ventricles. Yet the late Mr. *Hewson* informed me of a case of convulsions in which, on examination after death, he had found an effusion of blood, in a small quantity, on the *surface* of the brain.

SECTION II.

ON THE REPUTED CAUSES OF CONVULSIONS.

IT is remarkable that puerperal convulsions occur so rarely in the country, that I have not been able to make some very intelligent men, of great experience, comprehend them. The very few cases of which I have been informed, out of this city, have happened in large towns, or among those who might be reckoned in the higher ranks of life. We may therefore conclude, that a remote cause of these convulsions is to be sought for in the particular influence of the air, or in some change made in the constitution, by the customs and manner of living in cities and large towns; though there may also be immediate causes capable of producing these convulsions in any situation. It has also been observed, that women are far more liable to puerperal convulsions in certain years and seasons than in others.

The female constitution becomes infinitely more irritable than usual in consequence of the changes made in the *uterus* during pregnancy, every part of the body readily participating with the state of the *uterus*. This increased irritability, when not excessive, and only affecting in one peculiar manner, parts not essential to the economy of the constitution at large, is so far from being injurious, that it proves eventually salutary to the parent or child. But we may conclude, that in a constitution become unusually irritable from one cause, any additional cause of morbid irritation must often produce different and more violent effects, than if that constitution had been at rest, before the application of the second cause. It is therefore reasonable to believe, that the constitution which a delicate mode of education can scarce fail to give, still farther augmented by habits of indulgence, and the eager pursuit of pleasure in advanced age, renders such women at all times, and in all situations, more liable to every kind of nervous affection; that the state of pregnancy still makes them more disposed to the same affections, and from slighter causes to convulsions, than those women are who,
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by education, and habits of living, are seasoned, as it were, against impressions which might affect either their minds or constitutions; for it is to both these we are to look for the causes of convulsions.

That the state of the mind does very often dispose women to puerperal convulsions, and other dangerous nervous affections, there are numerous proofs to be drawn from the history of practice *. This has been more particularly observed among those women whose unfortunate situations render pregnancy an evil instead of a blessing; for, from their seclusion from society, their sense of present ill, or apprehension of future distress, such women are especially subject to convulsions at the time of labour, and to become maniacal after their delivery. It has also been observed that, from violent and sudden impressions on the mind, more generally from terror than any other, pregnant women have either immediately had con-

* There is a most interesting history of this in the Bible, *I Samuel, chapter iv.* and three remarkable circumstances are mentioned; first, the cause, the violent agitation of her mind; second, her state of insensibility; third, that the child was born living, though the mother died immediately after his birth.

vulsions, or fallen into a state which shewed a great propensity to them, though they did not appear before the accession of labour. In some cases however, from a state of apparently perfect health, the first tendency to labour has produced convulsions, which have continued till the child was born, or after its birth, unless the patient died; though in other cases the convulsions have been removed, and the labour has proceeded with great regularity. But there is often reason to suspect, that when convulsions have once appeared, they make to themselves new causes of their return, as they have continued for many hours, or even days, after delivery. There is likewise reason to think that causes, seemingly too trifling to produce convulsions, have sometimes been equal to the effect; as I recollect two instances of women who had convulsions at the time of labour, preceded by violent headaches, brought on, as it appeared, by the use of some mercurial preparation mixed with the powder used for their hair.

But it is not only in weak and very nervous habits that convulsions occur, as they sometimes happen in plethoric constitutions, and are accompanied with a strong action of
the

the vascular system in general, or of some particular part of the body; though I have never seen a case which could be attributed solely to this cause. With such different constitutions and indications, some with all the symptoms of debility and depression, and others of plethora and fever, the method of treatment must of course vary; and great judgment will be required to suit the proper method, if that can be discovered, both in the degree and the extent to which it ought to be carried, to the state of every individual patient.

Besides the general affections of the body, which may be supposed to give a disposition to convulsions, affections of different parts, as of the intestinal canal or bladder, if they should be too much loaded or distended, may have the same power*. But in the female constitution the *uterus* is the great source of morbid irritability, and of course every cause capable of disturbing that part beyond a certain degree,

* Ad spasmodica, quæ ex uteri vitio proveniunt, pathemata concitanda, non opus semper erit, ut materia corrupta et vitiata, utero inhærens, proximè et immediate id efficiat.

Hoffman, de Mal. Hysteric.

or in an unnatural manner, may affect the whole frame, according to the kind and degree of the original affection, or according to the previous disposition. Yet all the parts of the *uterus* do not appear equally liable to be disturbed, for the *os uteri* is evidently the most irritable part, even in a natural state, as well as when disturbed by any morbid or adventitious cause*. Hence it appears in pregnant women, on the first tendency to labour, that the changes which that part undergoes often occasion a variety of nervous symptoms; and that these may be brought on, increased, or continued, if they before existed, by artificial or imprudent dilatation of that part in the course of labour, when it is unusually rigid; or with an increased degree of irritability occasioned by inflammation†.

It

* In a case of this kind, which was published twenty-three years ago, I observed, "When the *os internum* began to dilate, I gently assisted during every fit; but being soon convinced that this endeavour brought on, continued, or increased the convulsions, I desisted, and left the work to Nature."

† A woman, whose case was communicated to me by Dr. *Mackenzie*, though the convulsions ceased after delivery, died on the fifth day of the puerperal fever. In almost every case

It has been presumed, that the pressure made by the expanded *uterus* upon the descending blood vessels, causing a regurgitation of the blood to the superior parts of the body, to the head in particular, by overloading the vessels of the brain, produced convulsions. This opinion applies to a cause very general indeed, and, if true, must have had its effect so frequently as not to remain in doubt. But it was before observed, that women of plethoric habits were universally less subject to convulsions of this kind than the feeble and irritable, and that they sometimes continued with equal violence after the birth of the child, when this cause was removed.

Women are far more liable to convulsions in first than in subsequent labours; and then, it is said, more frequently when the child is dead than when it is living. But when women have convulsions, the death of the children ought generally to be esteemed rather an effect than a cause, as they have often been delivered of living children when they were in convulsions; or of dead, and even putrid

case of convulsions that I have seen, there was evidently, after delivery, a greater or less degree of abdominal inflammation.

children,

children without any tendency to convulsions. Some women have also had convulsions in several successive labours; but, having had them in one, they generally, by the precautions taken, or some natural change, escape them in future. Lastly, I was for many years persuaded that convulsions only happened when the head presented; but experience has proved that they sometimes occur in preternatural presentations of the child.

SECTION III.

ON THE SIGNS WHICH PRECEDE CONVULSIONS.

PUERPERAL convulsions are often preceded for many hours, or for several days, by a vacillation of the mind, joined with a slight delirium.

Swimming in the head, and other vertiginous complaints, in the later part of pregnancy,

nancy, or in women in labour, not unfrequently forebode convulsions.

Violent or piercing pain of the head, preceding or recurring with the pains of labour, with similar signs of a disturbance of the functions of the brain, often denote convulsions*.

When women in labour frequently complain of blindness, they are in danger of convulsions.

Convulsions are often preceded by violent pain or cramp at the stomach.

Convulsions preceded by violent pain or cramp at the stomach, are usually more dangerous than those which are preceded by affections of the brain only; and they sometimes cause sudden death by stopping the action of the heart.

Women who have a rigor on the returns of the pains of labour, are in some danger of falling into convulsions †.

Women

* The lady of Captain C. who was at the full period of uterogestation, after complaining about twelve hours of the excruciating pain in her head, coming on at intervals, fell down dead as she was walking across the room.

† All rigors may be considered as a degree of convulsion; but these happen in labour frequently, though not always, without

Women in labour, who have great swelling or fulness of the neck, joined with an enlargement of the features of the face, and a staring or protrusion of the eyes, often fall into convulsions.

I have not known any woman, who had frequent vomitings in the time of labour, fall into convulsions; nor do these often happen in difficult labours.

The danger of cases attended with convulsions is not increased by their frequent return; as these depend upon the frequency of the action of the *uterus*, and not upon an increase of the cause of the convulsions.

without any ill consequences. I saw a feeble woman seized immediately after her delivery with a rigor, which, in spite of all the means which could be used, continued for twenty-five minutes, and then she died. Her labour had been very slow, but was perfectly natural.

SECTION IV.

ON THE MEANS OF PREVENTING CONVULSIONS.

FOR the prevention of common accidents it appears reasonable and proper, that women far advanced in pregnancy should avoid all irregularities in their manner of living, and every situation where they may be under restraint; or they will be liable to many complaints and inconveniencies*. At the time of labour it is a rule generally observed, that their minds should be kept composed, their apprehensions quieted, their present sufferings soothed by the tenderness of their friends and attendants; that they should be encouraged with the hope of a happy event, and that the knowledge of every thing which might agitate or distress them should be concealed. But when any symptoms of disease appear, be-

* Gregarious animals, when pregnant or giving suck, choose a place in the herd, different from what they take at other times.

sides these precautions, such means, as the consideration of any particular case may indicate to be necessary, are to be used; and no symptoms can require more attention than those which have been recited as threatening convulsions.

Bleeding is known to lessen, in a most effectual manner, all the complaints in pregnancy which arise from uterine irritation, and to a certain degree, in pregnant women, from all other causes. It is therefore, I may say, universally recommended in all cases, when these convulsions exist or are apprehended. The quantity of blood to be taken away, and the repetition of the operation, must depend upon the strength of the patient and the violence of the symptoms. But as, in some cases of this kind, there are also tokens of general debility, and a great dread of the operation, it will then be preferable to use local bleedings, by scarification and cupping at the nape of the neck, by the free and frequent application of leeches, or sometimes by cutting the temporal artery; a thing so easily done as not to deter us from the practice, and often so efficacious as to invite our doing it on many other occasions.

When

When these symptoms have been preceded or are accompanied with others which denote much disturbance of, or the lodgment of any offensive matter in, the stomach, emetics may be given with safety and advantage*. In many affections of the brain it has been thought that emetics afforded singular benefit; and when these convulsions have been threatened, or existed, patients have been sometimes wonderfully relieved by the operation of an emetic. Care is also to be taken to regulate the state of the bowels, whether they be too much relaxed or constipated.

Towards the conclusion of pregnancy some women are subject to violent cramps in various parts of the *abdomen*, or inferior extremities, together with complaints in the head or stomach. Should not these be relieved by

* A very short time ago, a lady had many severe attacks of this violent pain in the head, in the latter part of her pregnancy: this was constantly relieved by the application of leeches to her temples. When she fell into labour she became blind, and had one convulsion. Having great sickness at her stomach, without vomiting, I urged her to irritate her throat with her finger, by which means she vomited five or six times, and had no fit afterwards; the blindness remained in some measure for several days after her delivery. The child had been dead about a fortnight.

the customary means, the warm bath may be advised, and from its occasional use they will often find much benefit.

Objections have been made to the frequent or habitual use of opiates for slight complaints in pregnant women; and there is much reason to suspect that they often prove injurious to the child. But these objections do not apply to their occasional use when they are really necessary. Yet as, in very large doses, opiates have been known to produce convulsions, it seems better to give them in small quantities often repeated, than in a large dose at one time*.

Nervous medicines of various kinds are usually given on these occasions, rather with the intention of procuring temporary relief than permanent advantage; and they ought not to be neglected. But, on the whole, it appears that in bleeding, and keeping the stomach and bowels in a healthy state, in giving opiates,

* The late Dr. *Hunter* informed me of the case of a patient who had convulsions, preceded by the violent pain at the stomach. On the approach of her next labour she was attacked with the same kind of pain. She was immediately bled largely, and took thirty drops of *Tinct. Opii*, by which the pain was removed. She was delivered after an easy and natural labour.

and

and in the occasional use of the warm bath, we have the principal means which medicine affords, as far as can be judged either by reason or experience, of preventing puerperal convulsions, of insuring, in general, an undisturbed labour, and an uninterrupted recovery*.

SECTION V.

ON THE TREATMENT OF CONVULSIONS.

FROM the attack of convulsions without any previous symptoms, or from the want of attention to those symptoms, we have much more frequently an opportunity of exercising our judgment in curing than in preventing convulsions. These, it was before observed, may come on in the beginning, or in the course of a labour; or, which is more rare,

* *Mulieri ex partu convulsione tentatæ, si febris succedat bonum est.*

Hippocrat. Lib. i. de Morbis.

though not less dreadful, after the birth of the child; and some difference of treatment may be requisite, according to the time of their appearance. But, whenever they do come on, the danger is so manifest, and so alarming, as to call for the immediate exertion of all the powers of medicine for the relief of the patient.

The first and most obvious remedy in a case of such violent agitation of the whole frame, and such obtusion or perversion of the mental faculties, is, to take away a proper quantity of blood from the arm; for the direct good which may be expected to be gained by bleeding speedily, as well as for the prevention of the mischief which might follow the convulsions. One copious bleeding has sometimes entirely removed the convulsions, which have not returned; but, should these continue with equal force for a certain time, it will be expedient, for the particular easement of the head, to try the effect of local bleedings. Leeches are too slow in their operation; and scarification, with cupping, could not be done without much difficulty; so that the two methods, most applicable and adequate to the
urgency

urgency of the case, are, to open the temporal artery, or the jugular vein; and the latter has certainly been found preferable, perhaps because the blood is thereby discharged with greater velocity*. Objections are sometimes made to bleeding, lest there should be a difficulty in restraining the blood while the patient is so much disturbed; but there is no hazard, and the case does not admit of delay. The bleeding, from whatever part the blood may be drawn, is to be repeated according to the effect produced, the strength of the patient, and the violence or continuance of the convulsions†.

The state of the patient will seldom allow of the use of emetics, but, when they could be given, and have produced their effect, they

* For a patient who was lying in a state which deprived me of all hope of her recovery, Dr. *Reynolds* proposed that the jugular vein should be opened. The good effects were almost instantaneous; the patient recovered, and has since had many children.

† The late Dr. *Bromfield* informed me of a case of puerperal convulsions, for which he had bled the patient without much benefit. In the violence of some of her struggles the orifice opened, and a considerable quantity of blood was lost before the accident was discovered; but the convulsions from that time ceased.

have procured much relief; and the same observation may be made of purgative medicines. But the truth is, from the moment the convulsions come on, the patients often lose all power of swallowing, even in the intervals, and we are compelled to relinquish internal medicines altogether. Yet in such cases, clysters, if they can be made to pass, are usually given; but whether they were purgative in the first instance, or afterwards composed with a due quantity of opium, of oil of amber, the fetid gums, or other medicines of that kind, I cannot say that I ever saw any good produced by them, at least before the birth of the child; and sometimes they have increased the irritability.

On a supposition that the remote cause of these convulsions is in the too great irritability of the constitution at large, and the immediate cause in the excitement raised by some new stimulant, of the labour, or the like, opium in any convenient form has been freely given, and sometimes with evident advantage; though I have seen many cases in which it had no power to remove, or even to abate, this disease. Nor has more satisfaction been obtained by the various nervous medicines commonly prescribed; even musk, often re-
peated

peated in very large quantities, has done as little service as the rest.

When the convulsions have continued or increased, notwithstanding the bleeding and the use of all the other reasonable means which could be devised, the patient may be put into the warm bath, in which she may remain a considerable time if the convulsions are suspended while she is in it. There have been instances of women with convulsions who have been freed from them while they were in the bath; and I have heard of one or more cases of their being actually delivered in the bath, without any ill consequences, either to the mother or child. When a warm bath could not be procured, or while it was preparing, I have directed flannels wrung out of hot water to be applied over the whole *abdomen*, and, I think, with advantage.

On every principle, of removing the cause of the convulsions, of substituting new modes of irritation different from that which produced the convulsions, of preventing their ill effects, or of abating that exquisite irritability which renders patients subject to them, almost every measure and method has at one

time or other been tried. *Harvey** recommended the irritation of the nose in a comatose patient who was in labour, and gives an instance of its success. Many years ago I was led by accident to try the effect of sprinkling, or dashing cold water in the face; and in some cases the benefit was beyond expectation or belief†. But in other cases,
in

* *Exercitat de Partu.*—Page 554.

† I subjoin the following case to explain the manner of using the cold water. To a patient in convulsions who had been bled, and for whom many other means had been fruitlessly used, I determined to try the effect of cold water. I sat down by the bed side with a large basin before me, and a bunch of feathers. She had a writhing of the body, and other indications of pain, before the convulsions; and when those came on, I dashed, with some force, the cold water in her face repeatedly, and prevented the convulsion. The effect was astonishing to the bystanders, and indeed to myself. On the return of the indications of pain I renewed the use of the cold water, and with equal success; and proceeded in this manner till the patient was delivered, which she was without any more convulsions, except once when the water was neglected. The child was born living about fifteen hours from the time of my being called, and the patient recovered perfectly.

I was much mortified to find that I had not discovered a certain and safe method of treating convulsions; further experience convincing me that this often failed. It is however a safe
remedy;

in which I used this method with equal care and assiduity, no good whatever was derived from it; nor has the application of sinapisms to the feet, or blisters to various parts of the body, afforded any advantage, except, perhaps, when the convulsions had ceased, and the patient remained comatose.

When all means have been tried without success, and the convulsions remain, with evident and extreme danger of the patient dying every time they return, we shall, notwithstanding, be driven by necessity to wait quietly for the termination of the labour in a natural way, hoping she may struggle through; or shall be obliged to seek further resources in the delivery of the patient by art. But this part of our subject shall be considered in the next section.

remedy; and, though it may not always have sufficient efficacy to prevent or check convulsions, whoever tries this manner of using cold water will soon be convinced that it is a most powerful stimulant.

SECTION VI.

ON THE DELIVERY BY ART.

IF it be necessary to make distinctions as to the time when convulsions come on, with regard to the medicinal treatment, it is infinitely more so as to the delivery of the patient by art. We will therefore consider,

I. Whether delivery by art be proper or justifiable in the beginning of a labour attended with convulsions.

Women sometimes fall into convulsions before there is any discoverable tendency to labour, when there is not the smallest degree of dilatation or relaxation of the *os uteri*, and when there is no way of judging that it will be labour, except from the peculiarity of the convulsions, or the manner in which they return, and they may be readily distinguished from those proceeding from any other cause. In some cases also, after a long continuance of the convulsions, the *os uteri* has remained closed, and then it has been presumed that they were
not,

not, properly speaking, puerperal. Yet, after a long delay, it generally happens that the dilatation both of the internal and external parts begins, and proceeds very rapidly; so that, in a short space of time, from no degree of dilatation, the *os uteri* becomes completely dilated, when all hopes of delivery had been laid aside, and the very existence of the labour had been denied*.

Now whether it be proper and reasonable that attempts should be made to deliver a woman with the *os uteri* in this state, and under such circumstances in general, must appear very dubious to those who consider how much would then be required to be done by art. But, if we farther reflect upon the event of the greater number of cases of women who have been delivered by art, under these, and far more favourable circumstances, the greater part of whom died, their death being apparently hastened by the operation, however carefully it might have been performed, we shall be deterred from proposing it, and, I

* In a well known case of this kind, the midwife, presuming that it would not be labour, left the patient, who was found dead in the morning, with her child also dead lying in the bed.

think, be justified in forming this general rule of practice, subject perhaps to some exceptions, that women, who fall into convulsions in the beginning of labour, ought not then to be delivered by art.

I presume that, with all the assistance which art enables us to give, or if the labour be resigned to nature without interposition on our part, patients will sometimes die in a deplorable manner. I also know that, if the patient should die when no attempts were made to deliver, that the omission is always regretted; or, if she should be delivered by art and die, that the operation is lamented. Yet there must be a rule of conduct to be preferably followed, and with few exceptions; and these are to be made not according to the timidity or boldness of the person under whose care the patient may be, nor according to the hurry or tenderness of friends; but according to a judgment formed by a sense of duty, and maturely weighing all that the knowledge of a present case, or the experience of others, has enabled us to collect*.

2. Though

* Dr. Ross, who, forty years ago, was one of the physicians of *St. George's Hospital*, was the first person who had
courage

2. Though convulsions often happen in the beginning of a labour, and continue to its termination, the first stage is, in some cases, passed over without any unusual disturbance or irregularity, and they come on in the second stage of the labour when they were not expected. The propriety of delivering by art is then to be determined on other grounds than in the preceding statement. For, if it should be thought necessary to deliver by art, this may frequently be done without any peculiar force upon the parts concerned, as the *os uteri* will then either be dilated with the membranes, whole or lately broken, and the child may be turned without difficulty and safely extracted by the feet; or the head will have descended so low into the *pelvis* as to allow of the use of the *forceps* or *veētis*; or things may be so unhappily circumstanced as to leave no other option of the mode of delivery, but we may be compelled to lessen the head of the child. Whichsoever of these methods may be

courage to declare his doubt of the propriety of speedy delivery in all cases of puerperal convulsions. The observation on which these doubts were founded was merely practical, and the event of very many cases have since confirmed the justice of his observation, both with respect to mothers and children.

put in practice, the rules before given will be sufficient guides for our conduct. But, from a review of what has passed in my own practice, I feel it necessary to caution the operator against a forwardness to sacrifice the regard due to the child in cases of convulsions, as many of these, with very unfavourable appearances, have terminated happily; and against hurry in any operation, as he would thereby lessen his chance of saving the child, and probably with disadvantage to the mother; and no good can result to society, or reputation accrue to the profession from a practice by which neither of their lives are preserved. Should the convulsions continue after the birth of the child, the methods before tried must be continued, or new ones adopted, as the state of the case may then require or allow; and under these circumstances it will often be found preferable to satisfy ourselves with giving time, proceeding gently and circumspectly with general care, rather than to use incessantly the more active means which have sometimes been recommended.

With respect to those convulsions which first appear after the birth of the child, the exigence of the case must govern the treatment,

ment, and great attention is to be paid to the *placenta*, which, I believe, should not then be hastily extracted. There is in these an appearance of instant danger beyond what is found in convulsions before delivery, frightful as they are; and they seldom admit of any other consideration than that of supporting the patient by cordials and stimulating medicines, when she can swallow; or the application of such means as are in common use for restoring those who are faint, or in fits of any other kind; the principal and most efficacious of which is, to dash repeatedly cold water in the face, in the manner before described. If women escape the first fit there is a great chance of their recovery; but, should they remain comatose, or whatever their state may be, the particular symptoms are to be considered; and, from all that has been said upon this subject at large, we shall be at no loss to discover what may be applicable in any individual case.

ANOMALOUS, OR COMPLEX LABOURS.

O R D E R III.LABOURS WITH TWO, OR MORE CHILDREN.

SECTION I.

THE common order of generation, or the continuance of the particular kinds of animals, according to the properties of each kind, is more frequently invaded by an extension than a failure of the principle: instances of unusual increase being often found both in animals and vegetables, though these instances occur more frequently in some classes than in others.

With respect to generation, all animals may be divided into two classes, uniparient and multiparient. Of the multiparient the number of young produced at one birth seems to be

be indefinite and governed by accidental circumstances; as the frequent intercourse with the male, plenty or want of food, and perhaps by the casual fixture of the first conception in the first chamber or partition of the *uterus*. It very seldom however happens, that animals multiparient by nature bring forth only one *fœtus* at a birth; and perhaps the uniparient do not more frequently bring forth more than one, though in every species there are exceptions to this general rule. As to the economy of this important end of the animal creation, it would probably be found that the female multiparient animals have no exclusive attachment to any individual male; but that the female uniparient have naturally such an attachment.

In some species of animals, the propensity to bring forth more than their common number of young, is greater than in others; in sheep, for instance, more frequently than in cows, in these than in lions. Climate and state or degree of civilisation, seem to have their influence in this respect on human beings; for in the account of the women admitted into the Middlesex Hospital in this

city, in 8636 births, there were only ninety-three cases of twins, and none of a greater number. Of this number there were 3263 boys; 310 were still born, and of this number 180 were boys; and a somewhat greater number of the twins were boys. But in the accounts published by Dr. Clerke of Dublin*, the number of twins was in greater proportion to the births, and there were several examples of three children.

It has been supposed that there is a disposition in certain families to this multiplied generation, which may be transferred either by the male or female; but if this be the case, there are no tokens by which this disposition would be suspected, either from the form, size, strength, or other appearance.

It is not very usual for women to have twins, though these are to common observation more frequent in particular years than in others, and it can scarcely be doubted but there is some relation in those years, between the animal and vegetable creation. In the course of more than thirty years I have met with only one instance of three

* See Philosophical Transactions for the year

children, and never of more. I have been informed of several cases of four children, and there have been published a few cases of five children born at one birth, and beyond this number there is no well authenticated case upon record.

The size of children born at one birth is generally proportionate to their number, and with more than two, women seldom go to the full period of uterogestation. There must of necessity be somewhat more complex and sometimes hazardous when there are two or more children than in a single birth, but he who understands the proper management of a twin case will meet with no difficulty to embarrass him, how many children soever there may be.

SECTION II.

ON THE SIGNS OF TWINS.

1. WOMEN are said to be always of a greater size in the advanced state of pregnancy when they are pregnant with twins, than when they have a single child. This is a very uncertain sign. But if a woman be unusually large in the early part of pregnancy, and increases proportionably to the full period, there is good reason for suspecting she will have twins. But as the term *size* is indefinite, and what one, not much conversant in such matters, may consider as large, another may consider as moderate, there can be no surprise if conjectures on this subject are often proved to be erroneous.

2. The *abdomen* of women with child is in general uniformly distended without any inequality. It sometimes however happens, that the tendons which form what is called the *linea alba*, which leads from the navel to the
the

the middle of the *ossa pubis*, being less distensible than the sides of the *abdomen*, which are muscular, divide the *abdomen* as it were into two equal parts by a *raphe* or indentation through its inferior part. This presumed sign of twins is as ancient as the time when the human *uterus*, like that of quadrupeds, was supposed to be divided into *cornua*, a child being thought to be contained in each horn. But as the form of the human *uterus* is now well understood, and known to be equally distended by its contents, whatever the form of the *abdomen* may be, unless it be constrained by external means, less regard is paid to its form than its degree of distention, when we are judging whether it is probable that a woman be pregnant with more than one child.

3. In the course of a labour, sooner or later, according to the strength of the membranes and of the pains, the waters of the *ovum* are discharged at once, by one large, or a repetition of less discharges, when there is only one child. Mention is sometimes made of a second discharge of water, before the birth of the child, as a sign of twins. This second discharge may be occasioned by an imperfect

first discharge, or by water collected in a considerable quantity between the membranes, on the rupture of the second membrane. When however a child is far advanced towards birth, a sudden discharge from a part beyond the child does create a just suspicion of there being another child, the membranes of the second breaking by the efforts made to expel the first.

4. Extreme slowness of a labour, which has been considered as a sign of twins, may be produced by a variety of other causes, as we have often mentioned, and of course this must be a very uncertain one. It is true, when there are twins, the labour is almost universally slow, and this slowness has been not unreasonably attributed to the great distention of the *uterus*.

But our ignorance of the number of children of which a woman may be pregnant, fortunately does not lead to any errors in practice; because if we knew with certainty that there were twins, our conduct with respect to the birth of the first child should not be altered. It would then be our duty, as at all other times, to wait for the expulsion of the first child, if the labour were natural, and any difference

difference in practice would only relate to the second child.

After the birth of a child, it was formerly the custom to introduce the hand into the *uterus* to bring away the *placenta*, and to ascertain whether there was another child. This practice has been for many years justly held both unnecessary and pernicious, the *placenta* generally coming away without any, or with very little assistance, and the application of the hand to the *abdomen* giving full satisfaction as to the other intention. By this method we can often feel distinctly if there be another child, its limbs and different parts through the integuments of the *abdomen*; but it is generally by its degree of distention after the birth of the first, that we judge there is a second child. But on this principle I remember being mistaken in a case in which a young woman with her first child had an *ascites* during pregnancy; and the error must always be of that kind, to lead us to believe there are twins when there are not, but can never suffer us to overlook the case, or to leave a child remaining in the *uterus*, which through inattention or ignorance has sometimes happened.

In twin cases, priority of birth does not depend on superior strength but on convenience of position; that which is nearest the aperture of the *pelvis* must first be born, whether it be strong or weak, living or dead. When one child is beyond comparison strong, and the other feeble, it is not unusual for the feeble one to be killed, so that one may come into the world fat and full grown, and the other may be small, withered, and compressed. This dissimilarity in size and appearance was once considered as a proof of the obsolete doctrine of superfetation.

SECTION III.

ON THE MANAGEMENT OF TWIN CASES.

It is a constant rule to keep patients who have born one child, ignorant of there being another as long as it can possibly be done.

In

In far the greater number of those twin cases which have occurred to me in practice, while I have been employed in tying the *funis*, or waiting for a pain to exclude the *placenta*, the patient has complained with more than ordinary eagerness. On examination, I have found the second child on the point of being born, or the membranes protruding with great firmness, so that instantly on their breaking, the patient has been delivered with great rapidity, before I had time to give notice to the attendants to prepare for its reception. Of course, in labours like these, nothing particular could be required to be done, as they terminated with as little trouble as if there had been only a single child. Our intelligence and care can then only be exercised on one or other of these occasions.

1. Whatever may be the presentation of a first child, and whatever method it may be found necessary to pursue for the delivery of the patient, these are to be precisely the same, and there will be no greater difficulty than if there was only a single child. One circumstance alone demands attention, that if the presentation of the first child be such as to require the child to be turned, when we
have

have introduced our hand into the *uterus*, we must be careful not to break the membranes of the second child, if they be yet whole; or if we should find them broken, we must take care to bring down the feet of the same child. In all other respects I think I have found this case less difficult when there were twins.

Should the second child present with the breech or inferior extremities, there can be no solicitude about the case. We must act as was before advised in such cases, that is, we must wait for the expulsion of the child by the natural efforts if they are excited, or are equal to the effect, or we must give assistance.

The most fortunate presentation of the second child in a twin case is certainly with the inferior extremities, because it may in that position be born without injury or difficulty, and if assistance be required, that may be given with safety and convenience.

In cases of the second child presenting with the head, the same observations will hold good. That is to say, the child will probably be expelled by the natural efforts; or if farther assistance be requisite, the forceps or vectis may be conveniently used. As to lessening the head of the child, that
operation

operation cannot possibly be needful if there was room for the first child to pass without diminishing its bulk.

2dly. When after the birth of the first child there is a suspension of the pains of labour, and no efforts are made to expel the second child.

The process of the labour of the first child will have its effect on that of the second. If we were compelled to make the first labour artificial, it might be necessary or expedient to deliver the patient of her second on the same principle, unless the natural efforts should be efficaciously made very soon after the birth of the first child; that is not the statement I now wish to make. But when after the birth of the first child, expelled in a reasonable time and by the natural efforts, from some cause which we cannot comprehend or counteract, no efforts whatever are made for the expulsion of the second child, the patient being as much at her ease as if there had been no previous labour. This is a state of great solicitude to every person careful of his patient and of his own character, as he must know she will be liable to unpleasant, and even to dangerous symptoms, till the se-

cond is also born, and the business completed. The rules of practice have been on this subject not only various, but directly opposite. By all the older writers we have been taught that it was necessary and proper, if the second labour was not speedily finished, to extract the second child, according to its position or the situation, by properly adapted artificial means. Others, on the contrary, averse on every safe occasion, from the interference of art, have advised us to wait patiently till the efforts to expel the child were renewed, unless some symptom should arise, which should call for more speedy assistance. The latter appears to be a more judicious principle on which to act in general, and it is supported by some facts under the eye and direction of very able men, as well as by popular accounts; not to mention the guard it provides against the misconduct of those who may not be competent to give that assistance which they presume to be required. Like all other general principles in practice, it requires nice distinctions to be made in particular cases, otherwise the cause of danger will sometimes creep on insidiously, and come by surprise. No person can object to waiting for a certain time after the birth

birth of the first child, provided there be no pressing occasion for his interposition, before he determines on the extraction of the second child by art. We can then only debate upon the length of time; and, as we say with regard to the *placenta*, it shall neither be so short as to run the risk of injuring the patient by hurry, or rashness, nor so long as to increase the difficulty of delivering the patient, if we should be at length obliged to use art for that purpose. Without regard to those who are fond of speculative opinions, or the determination of those who are guided by practice alone, I have concluded that we may safely, and ought to wait for four hours after the birth of the first child, before we deliver the patient by art of the second child; if there be no particular cause for delivering her sooner. By this decision we shall certainly avoid many unnecessary operations, without detriment to the patient, without increasing our own difficulties, or hazarding our reputation.

The proper management of the patient after the birth of the first child is very obvious. There is no reason for alarming her fears, but the case will terminate more favourably by cheering her mind, and she will go on

on better by being assured that assistance shall be given if she should not be delivered naturally before some fixed time.

3. When an hemorrhage, convulsions, or other dangerous symptom come on, or are threatened, after the birth of the first, or before the birth of the second child.

Though there may be many aberrations, every labour has its denomination from the most important circumstance with which it is attended, and such circumstance principally governs the practice which it may be necessary to pursue. Among these, hemorrhages and convulsions stand in the first place, and, whatever may be the nature of a labour in other respects, they must be of secondary consideration. In twin cases, however proper or expedient it might be to wait, for a limited time, for the natural expulsion of the second child, the appearance of convulsions, or hemorrhage, or other dangerous symptoms, would decide the matter, and put the propriety of waiting any longer out of the question. The patient ought to be speedily delivered by art. But I wish to confine the term *speedy* to the determination to deliver; for under all circumstances, the operation instituted

tuted for extracting the child, of whatever kind that may be, ought to be performed deliberately, or we shall add to the danger which before existed. Whether therefore we are compelled by these dangerous appearances, or after waiting a specific time, four hours for instance, as was before stated, we have determined on the propriety of delivering the patient by art, we will bear in mind this rule, that we never ought to proceed with any degree of hurry or violence, if they can possibly be avoided. We will never forget that it is not the mere delivery of a woman which is of value, but as that may free her from the immediate danger she is in, leaving her with the fairest chance of a perfect recovery, at the same time preserving, should it be possible, the life of the child.

SECTION IV.

ON THE MANAGEMENT OF THE PLACENTÆ.

WHEN there are twins, more difficulty is expected, but not always found, in the management of the *placentæ*, than in the case of a single child.

The number of *placentæ*, separate or connected, is usually in proportion to the number of children. Some deviations from this observation have been recorded, a single *placenta* and a single cord having been found in a case of twins, the latter of which branched off into two, after it had departed to some distance from the *placenta*.

- When the *placentæ* are separate, that of the first child should not be extracted before the birth of the second child, as a discharge of blood must necessarily follow, and perhaps an hemorrhage.

When the *placentæ* are connected, they usually remain perfectly attached till after the birth of the second child.

When there has been a necessity of extracting the second child by art, it is commonly, but not universally, necessary to extract the *placentæ* also by art.

But presuming that two or more children have been expelled by the natural efforts, and that there is no hemorrhage or other cause of alarm, then there appears, and actually is, no more reason for giving assistance to bring away the *placentæ* than if there had been only one child, but we safely may and ought to wait for the expulsion of the *placentæ* by the natural efforts.

When we do give assistance, we must recollect that the two *placentæ* ought to be extracted together or in quick succession, as the patient would not be freed from the hazard of her situation, if one of them was retained. When therefore we pull by the *funes*, we must be careful that each shall bear an equal share of the force we think it expedient to use. Or if it should be necessary to extract the *placentæ*, by introducing the hand into the *uterus*, that is not to be withdrawn till both the *placentæ* are loosened and ready to come away. The case will then require precisely the same conduct as that of a single

placenta, which we have no occasion to repeat.

The *uterine* discharges are more copious in a case of twins than in that of a single child, and they are in general of longer continuance.

ANOMALOUS,

ANOMALOUS, OR COMPLEX LABOURS.

ORDER IV.

ON LABOURS IN WHICH THERE IS A DESCENT
OF THE FUNIS UMBILICALIS BEFORE ANY
PART OF THE CHILD.

SECTION I.

THE *funis umbilicalis* may be easily distinguished from any part of the child by its pulsation when the child is living, and by its form and continuation, whether the child be living or dead.

Some incident is generally assigned as the cause of this descent of the *funis*; but the rupture of the membranes, with a rapid discharge of the waters of the *ovum*, especially if they be excessive in quantity, has been considered as the most usual cause. This

circumstance may sometimes occasion the descent of the *funis*, but far less frequently than has been imagined. For, before the rupture of the membranes, the *funis* may very often be distinguished through them, lying before the head, or presenting part of the child, so that, whenever the membranes break, whatever might be the quantity of water, or the manner of their discharge, it would be impossible but that the *funis* must be the part which first descends. For this, with many other reasons, so many cautions have been given to avoid breaking the membranes; because, though the *funis* were thus situated, the child would not be in danger before the membranes were broken. It has also been observed, that the descent of the *funis* has happened to the same woman in several successive labours; so that, from the uncommon length of the *funis*, or from some other peculiar circumstance, some women seem to be particularly liable to this accident.

The descent of the *funis* makes little or no difference with regard to the progress or event of a labour, as far as the mother is concerned. The danger thence arising is wholly confined to the child. All our attention, and
every

every measure we pursue, must then relate to the prevention of this danger, which can only arise from the compression of the *funis*, and the consequent interruption or suppression of the circulation of the blood between the *placenta* and child.

All the assistance which art has afforded for this purpose has led to two points of practice; first, in directing us to return the descended *funis* beyond the head, or presenting part of the child, whatever that may be; in drawing it to the sides where it might be out of the way of compression; or, if these were impracticable, to favour the continuance of the circulation by preventing its exposure to the influence of the open air. Secondly, by passing the hand into the *uterus*, turning and delivering the child by the feet, by which the labour was accelerated and the danger of the compression of the *funis* avoided.

When the *funis* has descended, the state of the child may be precisely determined by the *funis* itself. If there be a pulsation in it, the child is certainly living, or though the pulsation may cease during the continuance of a pain and return in the intervals; but, if no pulsation can be perceived in the *funis*, the

child, we may be assured, is already dead. When the child is dead all the efforts of art must be useless to it, and might be injurious to the mother; we must therefore be satisfied with permitting the labour to proceed as if the *funis* had not descended. It is only when the child is living, which, as we before observed, will be proved by the pulsation of the *funis*, that any interposition can either be required, or of service; yet it is remarkable that writers on this subject have instituted their directions in general terms, without regard to the state of the child, whether living or dead. It is also to be observed, that the same directions have been given under all the various circumstances in which the mother may be, though these are sometimes such as to make it impossible for them to be followed, without inducing some danger to the mother, or with any prospect of advantage to the child; but we shall understand this subject better by considering it in the following manner.

SECTION II.

OF THE DESCENT OF THE FUNIS WHEN THE
OS UTERI IS BUT LITTLE DILATED.

SHOULD the membranes break in the beginning of labour, more especially if it be the first, when the *os uteri* is but little dilated, and the *funis* descend before the presenting part of the child, this would probably perish long before the *os uteri* became dilated, or acquired such a state of dilatability as to allow of the safe introduction of the hand, if we were disposed to turn the child; and before we had an opportunity of putting in practice any of the methods for replacing the *funis*. With this statement of the situation of the mother, it appears to be most eligible, and, I believe, it is generally consonant to the present practice, to submit quietly to the natural event of the case, than by ill-timed and violent attempts to deliver the patient by art, with very little hope of saving the child, and with no small danger to the mother.

SECTION III.

WHEN THE OS UTERI IS FULLY DILATED.

THE *os uteri* is understood to be completely or sufficiently dilated when it will allow of the introduction of the hand without much force. When the membranes break in the advanced state of a labour, should the *funis* be descended before the child, it will even then be necessary to consider the state of the child before we determine on the measures we might find it safe and think it reasonable to pursue. If the child should be dead, we then certainly ought to resign the labour to the natural efforts without any interposition. But, if the child be living, and the presenting part remain high up in the *pelvis*; especially if the pains have been slow and feeble, it will generally be better to pass the hand into the *uterus*, to turn and deliver the child by the feet; using, at the same time, the precaution of carrying up the descended *funis*, that
it

it may be out of the way of the compression. But if the head should be so far advanced in the *pelvis*, as in any conspicuous degree to render the turning of the child unsafe to the mother, it may be proper to use our endeavours to preserve the child by other means, such as by replacing the *funis*, or by accelerating the labour.

For the first we have been directed to raise the descended *funis* beyond the presenting part of the child, in the absence of a pain, as far as we can reach; retaining it there when the pains come on, till it shall abide above the presenting part of the child, when we might presume it was in safety. But this method is, on trial, seldom or never found to succeed, for the *funis* is usually forced down again on the return of the pains; though the success of these attempts will very much depend upon the quantity of *funis* descended, or upon its being in a single fold, or in several convolutions, and whether it be on the fore part or sides of the *pelvis*, where it can be more commodiously managed.

The late Dr. *Mackenzie*, than whom I have not known a man more intelligent in conversation, or more excellent in practice, informed
me

me of another method which he had tried. Instead of attempting to replace the descended *funis* in the common way, he brought down as much more of it as would come with ease, and then enclosed the whole mass in a small bag made of soft leather, gently drawn together with a string, like the mouth of a purse. The whole of the descended *funis*, enclosed in this bag, was conveniently returned, and remained beyond the head of the child till this was expelled; and, the bag containing the *funis* having escaped compression, the child was born living. But he very ingenuously told me, that he had afterward made several other trials in the same manner without success.

Many years ago Mr. *Croft* also informed me of a method which he had successfully used in these cases. When he had in vain attempted to replace the *funis* in the common way, he carried up the descended part beyond the head, till he met with the limb of the child, suppose the leg or arm. On this he suspended the *funis*, and then withdrawing his hand, suffered the labour to proceed in a natural way *. There may be much of accident

* Mr. *Croft* informed me that, besides the two cases published in the London Medical Journal for the year 1786,
he

cident in the success of these different methods, but I should believe, whenever it may have been thought necessary to introduce the hand into the *uterus*, that it would be found more expedient to complete the business by turning the child and delivering by the feet.

With respect to the acceleration of the labour, the means to be used must depend upon various circumstances, which we will consider in the next section.

SECTION IV.

I. It is to be observed that every child is not born dead, though the *funis* had descended, and no means were used to free it from compression; but it is evidently in great jeopardy. The danger depends upon two circumstances; the time which may pass when the *funis* is compressed before the expulsion of the child, and the degree of compression made upon it, in consequence either of the smallness of the *pelvis* in proportion to the head of the child, or upon the resistance of the soft parts. The first is beyond

yond

yond the power of art to remedy, and the second will depend upon the state of the parts, whether it be a first child, or whether the patient may have had one or many children. If the *funis* should have descended with a first child, in general, the slower the labour proceeds, the less will be the hazard from the compression; but, unfortunately, the children thus circumstanced will commonly perish, though sometimes they escape; and I have been mortified, in some instances, with an assurance that a very few minutes delay in the expulsion of the child has been the cause of the mischief. When the *funis* descends in those women who have had many children, there is little resistance made by the soft parts: and, by exciting the pains to act with more vigour, or by encouraging the patient to exert her efforts more strenuously towards the conclusion, the child will sooner be expelled, and its life be preserved. But no attempts to save the child are on any account to be made, but such as can be practised without the chance of injuring the mother.

2. When the head of the child presents, and has advanced far into the *pelvis*, if the
pains

pains are slow and ineffectual, and the child living, it may be considered whether, without hazard to the mother, we may not apply the *forceps* or *vectis*; and, by extracting the head sooner than there was reason to think it would be expelled by the natural pains, preserve the child. With regard to turning the child, and delivering by the feet in these cases, the operation can only be performed before the head has descended far into the *pelvis*; though in some instances I have gone in this respect beyond the common rules of the art, and have succeeded in saving the child.

3. When there is a descent of the *funis*, with a preternatural presentation of the child, our conduct must have regard to both these circumstances.

Should the breech present, the case will very much resemble the presentation of the head; that is, the same methods for replacing the *funis* may be tried, and with rather a better chance of success. If these fail, instead of considering the labour as one of those which is to be resigned to the natural efforts, it may be expedient at a proper time to bring down one or both of the inferior extremities, taking

taking care that the *funis* be not entangled between the legs of the infant; and there are few cases in which we may not conduce to the preservation of the infant, by proceeding in this manner when the *funis* is the presenting part.

Should the arm of the child present, and such presentation be complicated with a descent of the *funis*, very little difference of conduct will be required; because, for the first reason, we should determine to turn the child, and deliver by the feet, and the additional circumstance of the descended *funis* can require nothing more to be done. The general rules already given for the use of the *forceps* and *vectis*, and for the management of preternatural labours, make it unnecessary to enlarge on this part of our subject in this place.

CHAPTER VII.

ON THE MANAGEMENT OF WOMEN IN
CHILDBED.

SECTION I.

IN the course of the observations which have been made on various parts of the practice of midwifery, occasion hath frequently been taken to mark and to consider those resources of the constitution, by which present evils were remedied and future danger prevented. These resources are so conspicuous in all the circumstances attending parturition, and so generally found adequate to the effect, that, notwithstanding the long train of difficulties and diseases we have enumerated, it is a popular, and I believe a true remark, that

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the most healthful part of the lives of women is that in which they are employed in bearing and nursing children. As it is however proved, that those processes which are apparently of little importance to the constitution, do sometimes become the causes of disease, so it might be expected that those which are of the utmost importance, should, though generally exempt from danger, in particular cases become the causes of peculiar accidents and diseases. The laws of a religion, founded on principles of the most active benevolence, the feelings of humanity, and the common interests of society, will not suffer us to be indolent spectators of the distresses of our fellow creatures, from whatever cause they may arise. But in the situation which we are now considering, the passions of men are deeply interested, and there is more than common tenderness mixed with our concern for those who suffer on these occasions. Much industry hath therefore been used for the discovery and establishment of some method by which women might be conducted through the state of childbed with the least hazard of exciting those diseases, to which their state was supposed to render them peculiarly liable ;
or

or that so much pains should have been taken to discover the safest and most efficacious method of curing those diseases when they actually existed. The intentions of all may have been commendable, but as the directions given for both these purposes have been various and contradictory, it is proper to inquire into the principles on which such opposite practice has been advised, and then we may fix upon that which seems most reasonable, or has been found most successful.

By the earliest writers we are taught, that the treatment most proper for women in childbed was that which is now termed antiphlogistic, and without entering upon a minute detail, we were generally directed to confine every patient lately delivered, to the same strict regimen as if she actually had an inflammatory fever, or had received a wound of the most dangerous kind.

This absolute restraint from every customary indulgence, was a mode of shewing tenderness, of the propriety of which it was difficult to persuade the majority of people, especially as this was not pretended to be necessary with a view to remove any present evil, but to prevent a danger which sel-

dom existed. As no general plan of proceeding could possibly secure the well-doing of every patient, the failure of this strict regimen in any individual case, was brought forward as an argument of its general impropriety.

The proposal of allowing a diet more plentiful in quantity, and more cordial in quality, was founded on the presumed necessity of guarding against the consequences of that weakness, which was thought to be occasioned by the circumstances attending child-birth. Then was recommended the custom of supplying to the constitution those deficiencies which might be occasioned by the uterine discharges, by plentiful living, and caudle was dispensed with an unsparing hand to remedy every temporary inconvenience.

A consideration of these two different methods of proceeding, will explain all that has been said by different writers, on the doctrine and practice of low and generous living in childbed. There have also been recommended a few instances, in other methods of treatment instituted according to the fancies or opinions of physicians who have applied themselves to this subject, but of these I shall only mention two.

It had been observed that fevers of any kind were seldom terminated without an increased perspiration or a profuse sweating. A fallacious inference was then drawn, that the same process by which the constitution was freed from a disease, would, before the formation of such a disease, become the most likely method of preventing it. On this ground the custom of sweating women for a certain number of days after their delivery was established, and the greater the degree to which it was carried, and the longer it was continued, the greater security was presumed to be given to the patients from the apprehended diseases. Many inconveniencies followed this method of proceeding, especially in checking the natural discharges, in reducing the strength, and increasing the irritability of the patient. But the practice was pursued, neither common sense nor experience having power to extirpate deep rooted prejudice.

It was by some believed, that a woman lately delivered ought to be treated as if she had been injured by a concussion or violent bruise of some internal part; and that the means to be advised for the relief of present inconveniencies, as well as the prevention of

future mischief, were such as might be proper under similar circumstances from any other cause. There is no occasion to recapitulate all the means recommended upon this principle; but it may be observed that *spermaceti*, the most popular medicine given to women in childbed at the present time, was originally advised, because it was esteemed of sovereign efficacy in the case of an internal bruise.

It is remarkable that the different and opposite modes of treatment have been enjoined to women in childbed, universally, without any discrimination of peculiarity of constitution, former habits of living, of disposition to certain diseases, or the kind of labour which the patient might have endured; and without any regard to the heat or coldness of the climate, or the season of the year when the patient might be confined. General as the regulations were, all that was supposed necessary to be done, was to follow one or other of those injunctions implicitly, and whenever a disease arose, it was attributed, often erroneously, and sometimes very unjustly, to some irregularity or deviation from these.

It was observed that a state of pregnancy was an altered, but not a morbid state. The
same

same observation may be made with equal propriety and truth of a woman in actual labour, and of women in the state of childbed, which, though sometimes accompanied with diseases, cannot seriously be suspected to be of necessity connected with them. One moment's consideration and view of the happy and perfectly safe termination of labours in general among the mass of women in this predicament, must convince us to the contrary. Before we therefore fix upon this or that method of treatment, it is worth our trouble to inquire, whether it be necessary to establish any peculiar method.

When a woman is recently delivered, the attending circumstances reduce her to the state of a person who has had a profuse evacuation of any other kind. The discharge of the waters, the expulsion of the child and of the *placenta*, together with the lochial discharge, and the great efforts she may properly have made in the course of even a natural labour, must necessarily make a very great and immediate change in her constitution. From what does the change arise? from emptiness and fatigue. Is it possible to fix

upon any better method of treatment than what would be judged right and proper under the same circumstances from any other cause? Judging from events we certainly cannot, and after seeing much practice and trying various methods, I am fully convinced that those patients will fare the best, and recover most certainly and speedily, by whom the least change from their former habits is made. Some difference of treatment must of course be required for the delicate and the robust, for the nervous and the plethoric, when there has been a long and difficult, or a short and easy labour, in a hot or a cold climate, in summer or in winter, and in the same climate, in particular situations. These must of course be left to the judgment of the medical attendant. But I am convinced that the general principle of making as little change as possible, either in diet or any other respect, will best answer his expectations.

Some years ago it was a general custom to bind the *abdomen* very tight immediately after delivery, with the view of aiding the contraction of the integuments, and of preserving the shape of the patient. In some countries,

India

India in particular, this is practised to a degree that one cannot think of without shuddering at the mischief which must necessarily be occasioned. In this country the practice has been very much discountenanced as useless and pernicious, and it is now wholly or nearly laid aside, till five or six days after delivery; when a broad band, daily but very gradually drawn a little tighter, may be applied not only without injury, but with some advantage.

One of the first, and not an uncommon consequence of delivery, is faintness. This may proceed from any of these causes, loss of blood, fatigue of the labour, sudden emptying of the *abdomen*, and its consequent changes, or from great agitation of mind. The method to be pursued when it arises from the first cause has been fully considered when we spoke of uterine hemorrhages, and when it proceeds from other causes, wine or some other cordial is to be given, and the patient is to be kept perfectly undisturbed till she recovers. From the dread of any accident happening, I have long made it a general rule to wait with every patient for an hour after her delivery, not choosing to put confidence in those who

may not be well acquainted with what is necessary to be done on extraordinary occasions.

Sometimes, but very rarely indeed, one of the *labia* becomes suddenly and enormously enlarged, either towards the conclusion of labour, or immediately after delivery, from an effusion of blood in the cellular membrane of that part, and in a short space of time the skin bursts from the violence of the distention. This complaint was first described by Dr. *Macbride** of *Dublin*, and since that time I have been called to two instances. It occasions very great pain, but the most important part of it is the surprise it occasions, especially when it is not well understood. But I believe it is void of danger, having never seen any ill consequences from it, or ever found any thing necessary to be done, but to wrap the tumefied part in a flannel wrung out of warm water and vinegar, and when the coagula were discharged, to dress the little sore with some soft liniment.

* Medical Observations, *London*.—See also Medical Commentaries, *Edinburgh*, No. xxi.

Few women pass through the state of childbed without suffering more or less pain in the *abdomen*, and this may arise from various causes.

1. From coagula of blood formed and retained in the cavity of the *uterus*.

When pain arises from this cause, they are called after-pains *, and they return, though with longer intervals and less in degree, in the manner of those of labour, being intended to exclude whatever *coagula* may remain in the cavity of the *uterus*. Women have seldom pains from this cause with first children, and they are supposed to have them in proportion to the number of children they have had, which is generally true. Very much of this pain may however depend on the manner in which the *placenta* is brought away, for if that be done in a hurry, there will sometimes be formed many and large coagula; whereas if we wait for its exclusion by the natural action of the *uterus*, the cavity of

* Cum uteri cervix post partum sese modicè contrahit, et propterea sanguinis grumi cum difficultate aliqua prodeunt, doloresque faciunt quos obstetricēs nostræ enixus posteros (after throws) vocant, &c.—See Harvey, page 567.

this gradually lessens as the *placenta* descends.

The sufferings of women from these pains are sometimes very great, though they prove eventually salutary, and if we had it in our power, should not be suppressed, till the end for which they are excited is answered. They may however be safely moderated by warm applications to the *abdomen*, and when extremely violent by small doses of the *Tinctura Opii*, though much clamour hath been raised against the use of this medicine for women in childbed. It will also be of service, as soon as it can with propriety be done after delivery, to procure one or more stools, by an injection or some lenient medicine. The freedom from danger prevents all solicitude on this account, and we know when the *uterus* is cleared, pains from this cause will cease.

2. When the *abdomen* has been greatly distended, the integuments, even before delivery, will be tender and often slightly inflamed, and the tendernefs may be increased by the labour, and continue after delivery. A warm flannel well sprinkled with any kind of spirit applied over the whole *abdomen*, and occasionally

ally renewed, is the only thing I have found it necessary to do for this complaint.

3. From wind in the bowels.

On the exclusion of the contents of the *uterus*, a considerable change takes place in the position of many parts contained in the *abdomen*, and from many others the pressure is wholly taken away. A greater freedom being given to every part, the change for the present often gives the same uneasy sensation, as wind pent up or rolling in the bowels, though in a short time it is generally removed by the accommodation of the parts to their new state. Should there afterwards be reason to attribute the pain in the *abdomen* with which a woman may be troubled to this cause, instead of giving strong aromatic or heating medicines, it will be proper to procure one or more stools by an injection, or some lenient purgative, the most efficacious and excellent of which is that in common use, prepared in the following manner.

℞. Kali Tartarifat. vel Natron. Tartarifat.

Syrup. Rosæ āā unciam dimidiam

Infus. Senæ Tartarifat. uncias quatuor

Tinct. ejusd. drachmas sex. M.

Capiat cochlearia iij. vel iv. ampla primum, et post tres horas cochlearia duo secundis horis donec alvus soluta erit.

After

After the operation an opiate in any proper vehicle may be given, and the patient will be free from the complaint.

4. From spasm.

After delivery the *uterus* itself, or its appendages, or any of the contents of the *abdomen*, may be affected from this cause, with pain varying in degree, but sometimes extremely severe. This may often be relieved by lightly rubbing the *abdomen* with a warm hand, or with some anodyne embrocation, or the application of warm flannels wrung out of some spirituous fomentation. If these fail, recourse must be had to *Tinctura Opii*, at least to *opium* in some form, in suitable doses, according to the degree of pain, and repeated as may be necessary. Spasmodic pains of the *abdomen* very often resemble those arising from inflammation, and I consider it as one of the most difficult things in the practice of medicine, to discriminate them. In nervous habits the difficulty is much increased, as such are extremely liable to painful spasms, to have their pulse quickened, heat excited, and the whole frame disturbed in a manner very like to what happens in true fever or inflammation.

5. From

5. From inflammation.

This leads us to the consideration of that disease now generally called the puerperal fever; not because it is peculiar to the state of childbed, but because it is the most common species of fever to which puerperal women are subject, and certainly occasions the death of much the greater part of those women who die in childbed. This has been described by the ancient as well as modern writers, with perspicuity sufficient to distinguish it, but the methods proposed for the cure have been less satisfactory. Evident disadvantage hath arisen from its having been attributed to a variety of causes, from the different opinions entertained with respect to the nature and qualities of the disease, and from its having been described under such various appellations. It has been represented by some writers, as entirely owing its existence to the undue secretion or subsequent deposition of the milk, and therefore denominated, the milk fever; by others, to a suppression of the *lochia*, and called by that name; while others have described it as the miliary fever. Some again have considered this disease not as a fever, but as an inflammation or ulceration

(5) ulceration of the *uterus**, while others have contended that the inflammation was wholly confined to the *omentum*, the *peritonæum*, or the intestines, and that the *uterus* was not in anywise concerned. A contrariety of opinion of more importance, was produced by the interpretation of the word *Erysipelas*, which (6) was probably given by the ancients to this disease, without any intention to denote a specific kind of inflammation; yet the early use of this term was of sufficient consequence to bind those who attended to the nicer distinctions in nosology, to a particular mode of practice, according to the nomenclature†. With such different notions regarding the causes of this disease, we might expect that the treatment would be different, and as it was contradictory, we may presume that it must often have been hurtful. There is un-

* Uterus a placentæ separationē, præcipue violenta, excoriatur, tanquam ulcus ingens internum, lochiorum liberiore emanatione detergitur et mundificatur. Ideoque per excreta de puerperæ sanitate aut discrimine statuimus.

Harv. page 556.

† Si mulieri pregnantī fiat in utero erysipelas lethale est.

Hippocrates.

doubtedly

doubtedly much difficulty in forming a just idea of a very complicated disease, and in proportion to the difficulty, every attempt to make accurate distinctions is deserving of commendation. But however symptoms may vary from affections of particular parts, or in particular constitutions, there is but one essential nature of the disease, and if we have a true notion of this, we have less reason to be solicitous about the cause, or the determination of the part originally or principally affected. For a similar treatment may be enjoined with equal propriety, for an inflammation of the *uterus*, *omentum*, *peritonæum*, or intestines, or perhaps any of the contents of the *abdomen*; provided a fever is produced, and the influence of the disease, originally local, be extended to the constitution. It is however observable that inflammation of the *uterus* is far less dangerous than an equal degree of inflammation of any of the *viscera* of the *abdomen*, especially in the state of childbed; because the *uterus* readily admits of a return of the lochial discharge, which always affords relief, and sometimes cures the disease. But in inflammations of any of the contents of the cavity which has no vent or outlet, the effects

effects of the inflammation become an addition to the existing disease, or a cause of new disease.

The knowledge of the causes of this disease, whether occasional or immediate, will be of service rather in enabling us to prevent it, than in leading us to the cure when it is formed; for if a patient be brought into a certain state, the peculiar cause of that state will not demand any material difference in the treatment directed for her relief. There is but too much reason to lament that inconsiderate proceeding and the want of common care, frequently give rise to the puerperal fever. But independently of the changes occasioned in the constitution by particular modes of living, women, with a view to parturition, will not bear a comparison with other creatures*. The erect position of the body, the different structure of the *uterus* and *placenta*, and the passions, though necessary, and perfectly adapted to the rank in which Providence hath placed mankind, be-

* Mulieribus præ cæteris animalibus hæc contingunt, et præsertim delicatis, vitamque umbratilem et mollem degere assuetis: ut et iis quæ teneræ valetudinis sunt et facile in morbos labuntur. HARV. *Exercitat. de Partu.*

come permanent causes of much pain, and eventually produce inconveniencies, and sometimes danger; and for these reasons women are also subject to so great a number of complaints during pregnancy, from which all other creatures are exempt. Some of these complaints are dangerous in their own nature *, while others indicate or produce a disposition to diseases, not formed in the constitution till after delivery; and the inflammatory appearance so often observed in the blood of pregnant women, may perhaps be justly esteemed a mark of a state particularly disposed to fever. Some habits are naturally liable to diseases of the bowels, proceeding from an excess in the quantity or an alteration in the quality of the bile, and such will derive a new and temporary cause of them from irritation, and from the disturbed secretions of the *viscera*, by the pressure of the enlarging *uterus*, or by the labour. Nor is it improbable but that by the sudden removal of this pressure at the time of delivery, a greater proportion of fluids than circulate even in a natural state, may rush upon some particular part, and from a very slight obstruction

* The retroversion of the *uterus* for example.

cause a local plethora. Imprudent management at the time of labour, especially rude treatment of the *os uteri*, and a violent or hasty separation of the *placenta*, will often give rise to this disease. In short, every cause capable of producing either local inflammation or fever under any circumstances, will at this time be followed by worse effects; and any disturbance raised in the constitution, will be invited as it were to parts already in a very irritable state, from the violence which they have so lately undergone.

It is natural for women, especially with their first children, to have slow and painful labours, which they will generally bear with resolution, and if not mismanaged, without danger. Instead therefore of hurrying and deranging the order of a labour, which is always improper, and sometimes injurious, under the false and ill-judged notion of freeing the woman from her misery, we should consider that the business was intended to proceed slowly, and should be left entirely to the action of the *uterus*, and the efforts of the constitution*. When there are deviations from

* *Increpandæ sunt obstetrices, præsertim juniores temerariæ; quæ, cum parturientes præ dolore ejulare opemque efflagitare*

from the regular course of labours, the usefulness of midwifery, as well as the skill and judgment of the practitioner, will be shewn, in deciding which of these require the assistance of art, and in chusing the safest and the best means of giving relief.

There is not throughout nature an operation more wonderful than the act of parturition, and there is little reason to be surpris'd at the bad consequences which sometimes follow an alteration so important, though that alteration be natural. Judging from speculative principles, they might be expected to occur more frequently, and though they are often occasioned by bad management, under the most promising circumstances, and with the greatest care, they cannot always be avoided.

flagitare audiunt, ne imperitæ vel parum satagentes videantur, manus oleis oblinendo, locaque muliebria distendendo, mire tumultuantur; porrectisque potionibus medicatis, facultatem expultricem irritant; atque moræ debitæ impatientes, dum accelerare ac facilitare partum cupiunt, eundem retardant potius et pervertunt, efficiuntque non naturalem et difficilem.—Melius profecto cum pauperculis res agitur, iisque quæ furtim gravidæ factæ clanculum pariunt, nullius obstetricis advocata opera: quanto enim diutius partum retinent et morantur, tanto facilius et felicius rem expediunt.

HARV. *Exercitatio de Partu.*

When a woman is delivered, it seems necessary to make a moderate and uniform compression upon the *abdomen*, but binding it tight is certainly improper, and the general abuse of bandages, as was before observed, has induced me to forbid it altogether till the seventh or eighth day after delivery. Women are certainly not so often attacked with this fever, after difficult labours, because of the particular care with which they are then managed, whereas after easy ones they are more unguarded.

The time when women are chiefly subject to this fever, is uncertain. There are not wanting instances in which it has been evidently formed before delivery, or during labour, or at any intermediate time for several weeks afterward; but the sooner from the time of delivery the patient is attacked, if in an equal degree, the greater is the attendant danger. But the most frequent time of its appearing is on the third or fourth day after delivery, when the patient is seized with a shivering fit, from the violence and duration of which we may generally estimate the danger of the succeeding disease. In some cases however there has been no cold or shivering fit,
or

or none which was observable; and in others, the shivering fit in the state of childbed has not been followed with those symptoms which were to be apprehended. Before the shivering fit, the patients have been much debilitated, and complained of wandering pains in the *abdomen*, which very soon became fixed in the hypogastric region, where a swelling or fulness with exquisite tenderness soon ensue. As the disease advances the whole *abdomen* becomes affected and tumefied, sometimes nearly to its size before delivery, the woman herself being sensible of and describing its progress. She also feels great pain in the back, hips, and sometimes in one or both legs, and other parts affected in uterine complaints. She can scarcely lie in any other position than on her back, or on one side, with her body incurvated, and if the disease be confined to the *uterus*, the seat of the pain seems to be changed when she alters her position. There is usually either a vomiting of green or yellow bitter matter, or a nausea and loathing of the stomach, with an offensive taste in the mouth. An instantaneous change both in the quantity and appearance of the *lochia* takes place, and sometimes, though rarely,

they are wholly suppressed. The milk if secreted recedes, or is diminished, and the taste with the appearance are much altered. The urine is voided often, with pain, and in small quantities, and is remarkably turbid. A tenesmus or frequent stools come on, and from the general disturbance it is often manifest that all the contents of the *pelvis* are at once affected by the disease. The tongue becomes dry, sometimes remains moist and is covered with a thick brown fur, but as the disease advances its appearance varies, and in some dangerous cases it has been little changed. The patient immediately entertains the strongest apprehensions of her danger, and usually labours under vast anxiety, her countenance bearing indubitable marks of great suffering both in body and mind.

The progress of this disease is sometimes extremely rapid, especially in unfavourable seasons and hot climates. Instances have occurred in which women have died within twenty-four hours of the first attack; and I have seen a few who never grew warm after the *rigor*. In some, death has followed quite unexpectedly, either from inattention, or from the scarcely perceptible, but insidious progress

progress of the disease, the indications not having been at all proportionate to the danger. In other cases the shivering fit is succeeded by heat, thirst, and other symptoms, according to the course observed in other fevers; but the pain which originated in the *abdomen* joined with these, is to be esteemed the pathognomonic or chief sign of this disease. It is necessary to enumerate all the symptoms which commonly attend this fever, though not in any individual patient, yet cases will occur in practice, in which there will be much variation, depending on the degree of disease, the part affected, the constitution of the patient, and the period after delivery when the fever makes its appearance.

The pulse has almost invariably in this disease an unusual quickness from the beginning. It has often that strength and vibration observed in disorders of the most inflammatory kind, in robust constitutions, and yet is sometimes exceedingly feeble and quick, beyond what might be expected from the concurring circumstances. The latter is to be reckoned among the most dangerous signs, proving perhaps, that there is a great degree of disease, and that the powers of the

constitution are unable to struggle with it, or to bear the operation of the medicines which may be necessary for its relief. There is much variation in the subsequent stages, but there is scarcely a worse omen than a very weak and accelerated pulse, even though the other symptoms may seem to be abated. But this quickness of the pulse, if not attended with other signs of inflammation or fever, is not to be considered as indicating danger, because nervous patients have sometimes a very quick pulse, unaccompanied with any other dangerous symptom.

The signs of inflammation, joined with those of extreme irritability, continue for a few days, when those of putridity appear, sooner perhaps in this than in most other diseases, which are originally of the truly inflammatory kind. The teeth very early collect a brown adhesive *sordes*, and all kinds of food and drink are nauseated, except such as are agreeable from their coldness or sharpness. A singultus attends, every return of which affects the *abdomen* in the most painful manner. *Petechiæ* or *vibices* are often found in unwholesome situations and in some constitutions of the air, at a very early period of the disease,
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and there are frequently miliary eruptions; but the latter seem rather a consequence of the method of treatment than of the disease, for they do not afford that relief which often follows their appearance in true eruptive fevers.

The bowels are in general very much disturbed, and in some cases a looseness takes place immediately upon the accession, in others three or four days after, or not till the last stage of the disease; but it very seldom fails to attend, nor can it be removed without the greatest difficulty as well as danger before the disease is terminated. The stools often come away involuntarily, being always preceded by an increase of pain, and every evacuation gives momentary relief. They are uncommonly fetid, of a green or dark brown colour, and working like yeast. It is also remarkable that after the long continuance of the looseness, when the patient has taken little or no solid nourishment, large and hard lumps of excrement will be sometimes discharged, which one might suspect to have been confined in the bowels for a long time before delivery. With regard however to this symptom, it is very necessary to observe, that great disturbances of the bowels are frequently occasioned by mere irritation.

There

There is a peculiarity in this fever which I believe has not hitherto been observed or mentioned. It is an erysipelatoſe tumour of a duſky red colour, on the knuckles, wrifts, elbows, knees, or ancles, about the ſize of a ſhilling, and ſometimes larger. This is almoſt univerſally a mortal ſign, and on the inſpection of thoſe who have died with this appearance, the diſeaſe has been found to have affected principally the *uterus* or its appendages.

When this fever commences ſoon after delivery, and continues its progreſs with violence for a few days, our hopes of a favourable event will often be diſappointed, and the impending danger may uſually be foretold by the uninterrupted progreſs of the ſymptoms and by returns of the *rigor*. A looſeneſs immediately ſucceeding the attack, though in one ſenſe it may indicate the degree of diſeaſe, always contributes to its abatement, and ſometimes proves critical; as does likewise a ſpontaneous vomiting, ſometimes even towards the laſt ſtage, when all hopes of recovery were abandoned. The profuſe ſweat which follows the ſhivering fit has very often been completely critical. In ſome there has been a tranſlation of the diſeaſe to the extremities, where
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the part has inflamed, and a large abscess has been formed ; a similar abscess has also in some cases been formed on one side of the *abdomen*, which has been healed by the most simple treatment. Fresh eruptions of the *lochia* are always a favourable symptom, and are to be reckoned among the most certain signs of amendment. A subsidence of the *abdomen*, after copious stools, and with a moist skin, is a fortunate alteration for the patient ; but that circumstance, without evacuations, and a dry skin, threatens the utmost danger. In the most severe degrees of this disease, which have resisted all the means of relief in the early stage, those who have escaped, seem to have owed their safety to the vomiting before mentioned, or to a constitution happily strong enough to bear the long continuance of the looseness, by which the effects of the disease were gradually drained away.

The swelling and tenderness of the *abdomen*, joined with a fever, were mentioned as the pathognomonic symptoms of this disease. But as these parts are often affected by the greatness of the distention during pregnancy, by after-pains, by flatulence, and by spasms, as well as inflammation, we may be alarmed without reason, and mistaken in giving the
name

name of a disease which does not exist, to complaints of infinitely less consequence. On this principle, we may account for the slight manner in which some have mentioned the puerperal fever, while others have recommended methods of treatment foreign to its nature and inadequate to its cure. But with attention, this fever may be readily distinguished from all other complaints, to which it bears any resemblance. Violent spasmodic affections of the *uterus* coming on soon after delivery, and extending their influence to various parts of the *abdomen*, if accompanied with great quickness of the pulse, may give apprehensions of this fever, though they will be almost immediately relieved, by a fomentation to the *abdomen* and the proper use of opiates. After-pains approach nearest to those pains of the *abdomen* which attend it, but though these are sometimes attended with great tenderness of the *abdomen*, the intervals of perfect freedom from pain, which are never observed in this fever, notwithstanding there may be considerable exacerbations, and the regularity with which, in after-pains, all other circumstances proceed, will be evident and sufficient distinctions.

About

About the time when this fever most frequently appears, especially in its worst form, a disturbance is raised in the constitution by the secretion of the milk. The consent between the *uterus* and breasts is of so intimate a nature, that it is scarcely possible for them to be affected separately, as the transition of the humours from one to the other abundantly demonstrates. But though this disease has been very often imputed to the milk, the supposition is probably groundless; for if that secretion is not interrupted in its natural course, the inconveniencies arising from it, though they may be troublesome, will not be attended with any danger. But those who are unwilling or unable to give suck, or to whom suckling may on some other account be improper, are liable to various complaints from which nurses are free. In such cases, I have found no method of preventing so effectually the ill consequences likely to ensue, as by procuring stools before the secretion is completed, and for some days afterward with regularity. Should inflammations come on, and abscesses be formed in the breasts, they are always much lamented, and considered as proofs of mismanagement; but there is great
reason

reason to conclude that they sometimes prevent more grievous and dangerous complaints, and that they could by no care have been obviated. It is remarkable that not one instance has been observed, of any woman, who had an abscess in the breast, being attacked with this fever; nor of one who, in consequence of her labour, had such an affection of the bladder as to occasion a suppression of urine. At another period of life, when the disposition to cancerous diseases exists in the constitution, their fixing upon the *uterus* or breasts seems to be merely owing to some accidental cause.

A disease in which the symptoms come on with violence, proceed with rapidity, and of which the event has so often been fatal, cannot fail to alarm every man solicitous for the welfare of his patients, or who has a due regard for his own character; and under circumstances so peculiarly distressing as are those of women in childbed, humanity would urge us to exert our abilities for their relief with zeal and tenderness.

We should in the first place endeavour to shorten the *rigor*, by hot applications to the extremities, and by giving warm diluents in
small

small quantities often repeated. A conviction of the necessity of speedily removing the *rigor*, has induced some to give very active cordials for this purpose ; but as the hot fit which succeeds will in some measure depend upon the means used, it does not seem proper to give spirituous liquors unless they are well diluted.

Bleeding has been advised in the beginning of violent diseases, with the intention of suppressing the disease, of alleviating the symptoms, or of rendering the operation of the medicines which were afterwards to be given, more safe and effectual. For the cure of the fever now under consideration, some have placed their whole confidence in the early and free use of this remedy, while others have expressed more than ordinary fears and apprehensions with respect to it*. Perhaps it

* Equidem de sanguinis missione multum controvertitur ; nonnulli enim venam pluries tundendam esse arbitrantur, dum cæteri vel minimam sanguinis detractionem averfantur.—— And afterward——Hæc (praxis) enim docet phlebotomiam, haud nisi casu urgentiori et summa cautela esse celebrandam, pro rerum conditione. Cæterum multa de hac re lepide et dilucidè tradita, prostant apud scriptores, quæ tamen inter praxim implicatissima deprehenduntur.

LIEUTAUD. *Synops. Univ. Pra. Med.*

may be impossible to form a rule of practice so general as to preclude the necessity of leaving much to discretion; for the treatment of patients differing in constitution, though labouring under the same disease, must vary, or the worst consequences will inevitably follow.

In the early part of my own practice, I had much doubt of the propriety of bleeding indiscriminately for the cure of this disease, and I was long of opinion that it was not the most natural, safe, or effectual remedy. I considered that spontaneous hemorrhages were seldom critical in this disease; I suspected that women in childbed sustained bleeding worse, than in almost any other situation; and from some defect in the remedy, or some error in the application, I often found myself disappointed in my hopes and expectations when I relied upon it. It seemed also an observation of importance, that those women who had lost much blood at the time of delivery, were more liable to this disease, and that it was more commonly fatal to them. The consequences also of erring by the too free use of the lancet seemed more to be dreaded, because they were
harder

harder to be repaired, than those which might arise from an opposite conduct.

But I am now convinced by manifold experience that my reasoning was fallacious and my fears groundless, and that what I had considered as proofs of the insufficiency or impropriety of bleeding in the true puerperal fever, ought in reality to be attributed to the neglect of performing it in an effectual manner, at the very beginning of the disease. In short, if the first stage be suffered to pass unheeded, bleeding will certainly then be injurious, the opportunity having been lost; and the physician afterwards called in, however great his talents may be, will too often have the mortification of being a spectator of mischief which he cannot then remedy, and of an event which he can only deplore.

It is in general absolutely necessary to bleed in the beginning of the puerperal fever, and we may then avail ourselves of the advantage which this operation affords, with equal safety and propriety as in any other inflammatory disease, under other circumstances. With respect to the quantity of blood drawn, we are to be guided by the constitution of the patient and the violence of the symptoms,

being cautious not to err by bleeding unnecessarily, or in taking away too large a quantity. But if benefit should be derived from the first operation, and the violence of the disease should require it, we shall be justified in repeating it at short intervals; nor with a view of moderating or retarding the progress of the inflammation, but if possible of wholly suppressing it. For when the fever has remained for a very few days, the putrid symptoms advance very rapidly, and its continuance depends upon causes which cannot be removed, but will be increased by bleeding. When the attack is violent and the constitution feeble, it is always more safe and expeditiously serviceable to draw blood by scarification and cupping, or by the application of eight or ten, or even a greater number of leeches to that part of the *abdomen* which appears to be principally affected. In some countries the application of leeches to the hemorrhoidal veins has been considered as more effectual in this disease than any other mode of bleeding. I must acknowledge that the advantages which I have often seen derived from local bleeding, have given me the greatest satisfaction and pleasure.

But

But though women who have had profuse uterine hemorrhages at the time of delivery, are particularly liable to the puerperal fever, from this or some contingent reason; and though it is seldom removed by spontaneous hemorrhages, yet these are sometimes critical. The following case which was communicated to me by Dr. Joseph Denman, of whom, as he is endeared to me by sentiments of esteem and regard more closely than by fraternal affection, I might be allowed to speak in terms of high approbation, is an example of this kind.

“ I was called in the middle of the night to go ten miles to a woman whose *placenta* had been retained many hours after the birth of the child. The want of courage to withstand solicitation and the distance from me, were my reasons for undertaking to separate it. The *placenta* adhered strongly, but the separation was made very gently and without any considerable hemorrhage. On the third day, the patient was seized with a shivering and fever, which continued all night. From this she was relieved by so large a discharge of blood from the *uterus*, that I was again sent for on that account. There was no

swelling of the *abdomen*, but great tenderness, much pain in the head, constant thirst, a little delirium, and she had no stools. An increase of fever every evening, and the same profuse discharge every forenoon, continued for ten days. She took occasionally Testaceous Powders with Rhubarb, Saline Mixtures, Tincture of Roses, Infusion of Bark, and some doses of Opium. She at length recovered."

The hemorrhages seem in this case to have been absolutely critical, and my own practice hath supplied me with instances of a similar kind in different stages of this fever, and many more have proved the great advantage of returning or free sanguineous lochial discharges. Yet in these cases I had sufficient reason to presume, that the disease had not only originated in the *uterus*, but was confined there, without extending to the abdominal *viscera*.

Having finished these observations on the use and advantages of bleeding, I beg leave to repeat, that when the puerperal fevers of a trite inflammatory nature exist, I feel assured I am right in the opinion I have advanced respecting bleeding. But as it is sometimes extremely difficult to distinguish between

tween this fever and complaints proceeding from mere irritability, which far more frequently occur, especially in very delicate habits, and as all the complaints arising from irritability would at this time be increased by bleeding, and rendered dangerous by a repetition of it; I recommend in the strongest terms that we should be accurate in our distinctions before we determine on a plan on the pursuit of which the good of our patient may so essentially depend.

When the attack of this fever is violent, a vomiting of bilious matter attends, there is often a multiplicity of stools, and the commencement is sometimes not unlike a moderate degree of the *cholera morbus*. It has been an almost universal rule in practice, in other diseases, to forward these evident intentions of nature, at least not hastily to obstruct or suppress them, but in this, different measures have been pursued. It has been objected that a woman lately delivered, has suffered too much from her labour to bear with safety a method of proceeding found useful in other fevers, with the same indications; or that the parts affected would be too much agitated by the operation of an emetic. It has also

been conjectured that the vomiting and uneasiness of the stomach ought to be ascribed to uterine irritation alone, and were hysteric symptoms in the common acceptation of the word, and therefore not likely to be relieved by encouragement. But if in these cases we consider the appearance of the matter discharged, the great relief which the patient immediately receives from the evacuations, and the advantages which are found to result from it in the course of the disease, it seems impossible to fix upon circumstances which more strongly indicate the necessity of giving an emetic. Consent has been given to an opinion that the vomiting of porraceous matter when an hysteric symptom does not require evacuations; yet even in such cases it may be suspected that the porraceous matter by its irritation upon the stomach, is the *materia morbi* which occasions or increases the spasms, and that the discharge should then not be stopped while it is preternatural. It would be difficult to imagine a situation in which medicines of any kind were likely to do much service, when the stomach is oppressed with vitiated humours.

But however unsatisfactory these reasons may be, experience will support me in asserting, that when such complaints accompany the beginning of this disease, or occur during its progress, we shall lose an opportunity of doing much service if we are deterred from giving a vomit; and that the operation is not only perfectly free from danger, but certainly answers many other good purposes besides that of cleansing the stomach. It is nevertheless to be observed that an emetic was in this case first advised, chiefly for the relief of a symptom, without any expectation of thereby curing the disease. Yet there are advocates so strenuous for the use of emetics in this disease, as to recommend the repetition of them every day, and who have asserted that they are the most powerful medicines for the absolute cure of the puerperal fever. To the merit of having first recommended this practice I am not entitled, and perhaps not fully competent to judge of it; yet experience has in many cases proved to me that emetics may be given and repeated in this disease with very great advantage.

I may in this place be permitted to make a digression for the purpose of observing, that

it appears, from the records of medicine, that two different opinions were very early entertained respecting the treatment of fevers in general. The first and most prevalent of these was, that every fever was a process established by the powers of the constitution, for the purpose of altering and assimilating, or of separating and rejecting some offending matter; or changing one state of the body into another, better fitted for the performance of its functions. The process was defined by the term generally, though not properly translated, fermentation, by which the ancients understood the different states of bodies whilst they were in the act of changing into some new form or state, or the process by which they were changed; and not vinous, acetous, or any other fermentation, according to the modern use of that term. As this process in fevers was expected to be ultimately salutary, it could not, according to this opinion, be disturbed without mischief, unless, on account of violence, irregularity, or some extraordinary deviation from its usual course, it might be judged necessary to moderate it when too violent, to encourage it when too remiss, or to obviate accidental symptoms. The second opinion

was,

was, that in a fever excited by any cause, the body was in a state adverse to its wellbeing, and perhaps inconsistent with life; and that the fever ought therefore to be subdued by the expeditious use of all such means as were likely to remove the cause, or to appease the action of the powers of the constitution; or, by weakening the powers themselves, to reduce the body into such a state, that it should be unable to continue or maintain what might be called the feverish process.

The marks of these opinions may be readily discovered to pervade every system of fevers, and every method of treatment which has been offered to our consideration, or recommended for our guide, even down to the present time. There is no doubt but that the knowledge of both these opinions will occasionally be found of much use in practice, if we are not led to extremes. But the knowledge of a disease, or of a method of treatment, is of infinitely less value than the faculty of applying it, and constitutes in fact a small share of the excellence of a physician. He, by discovering the part principally affected, and by weighing its importance to the constitution; the nature of the disease, its pre-
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sent state and probable consequences ; and by taking into consideration all the collateral circumstances, will clear his mind from perplexity and error, and form a rule for his own conduct far beyond the influence or power of any doctrine.

But in the treatment of the puerperal fever the difficulty has been much increased on account of the very great caution which, for reasons before assigned, was judged necessary. It was also said that by regulating the puerperal discharges, all the diseases incident to that state were to be prevented or most naturally cured, and all evacuations by which these were likely to be interrupted or suppressed were forbid. In short, in this state there was a suspicion of something sacred or mysterious, with which we were not authorized to interfere ; and neither common sense nor observation had sufficient efficacy to controul those impressions which originated in speculation and prejudice, and which are now fully proved to have been without foundation.

Many years ago, after much embarrassment and repeated disappointments in the treatment of this fever in the customary way, I gave the powder which was recommended by,
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and has acquired much reputation under the sanction of the late Dr. *James*, and sometimes the following medicine; and I was soon sensible of their good effects.

℞ Tartar Emetic. gr. ij.

Ocul. Cancror. pp. 3 ij. *intimè misceantur.*

Of a powder thus prepared, after bleeding, and if thought necessary, the exhibition of a clyster, I have given from three to ten grains, repeating it as circumstances require.

Should the first dose produce no sensible evacuations, for on these only we are to rely, an increased quantity must be given at the end of two hours, and we must proceed in that manner, till the end we wish be obtained.

But if the first dose should occasion a vomiting, purging, or profuse sweat, we must wait for the good effect of these operations; and we shall then be able to judge of the propriety of repeating the powder.

But when the evacuations are concluded, if any alarming symptoms should remain, we need not hesitate to give the powder in the same quantity as was first used, though an equal quantity is not often necessary, if the first dose has operated properly. We cannot reasonably expect that a disease, which exhibits

hibits such evident marks of danger, should instantly cease, even if the principal part of the cause should be removed, or of the effect be abated. Yet we must be careful not to rely so far upon an abatement of the symptoms, as wholly to desist from pursuing the method which produced the abatement; for no disease is more liable to returns, which are generally more violent than the first attack, and with accumulated danger. It must also be observed, that as the certainty of the cure often depends upon the due repetition of the powder, the custom of giving it at stated hours is never eligible, and sometimes improper.

If a sickness, loathing of the stomach, or offensive taste in the mouth, attend the commencement of the disease, this medicine seldom fails to occasion vomiting, and the patient, with a countenance strongly expressive of the benefit she has received, will attest the advantage of the method pursued. Nor does the medicine often fail to procure copious stools, which are uncommonly fetid, and, as was before observed, in the loose ones, lumps of hardened *fæces* are intermixed. Their appearance should in some measure guide us with respect
to

to the continuance of the evacuations, in proportion to which the *abdomen* becomes easy and subsides, and the other symptoms become more favourable. The urine is soon voided with more ease, and in larger quantities, a moisture of the skin or profuse sweat succeeds, and the *lochia*, which were before brown or pale, fetid, and in small quantities, increase and become sanguineous. But we are to remember that the small quantity of the *lochia* is never to be esteemed as indicative of disease, independently of other appearances, because with respect to quantity they vary in every constitution.

At the same time that we avail ourselves of the advantage to be obtained from the use of the antimonial powder, we must not neglect the use of those means which contribute to procure immediate ease or relief to the patient. Emollient clysters in cases attended with violent pain, especially if preceded or accompanied with costiveness, are necessary and proper. Clysters have also been esteemed of more importance than merely as the readiest means of promoting stools, or as a temporary fomentation to the bowels; for some physicians of great experience have
thought

thought they were able to remove a great part of the cause, or to prevent the continuance of the disease, by directing them to be administered so frequently, that they were at length returned without any mixture of *faeces*. Fomentations, or vapour-bathing, or even the warm bath, may sometimes be used with advantage, but I think a folded warm flannel, well sprinkled with brandy, and occasionally renewed, is one of the best and most comfortable applications. When the pain is confined to one part of the *abdomen*, or remains after the abatement of the fever, a blistering plaister, applied directly to the part, may always be recommended with safety, and will sometimes do much service. Plentiful dilution being absolutely necessary, the patient should be carefully supplied with proper drink, in small quantities often repeated. The most palatable, and generally the best, is chicken water, or very weak beef tea; or, if objections are made to these, barley water, thin gruel, milk and water, whey, and tea of almost any kind, may be drank at pleasure.

In this manner I treated the wife of a soldier in the guards, whom I attended July 1, 1767, in a safe, but tedious labour. She was
of

of a very strong habit of body, and upwards of thirty years of age. About thirty-six hours after the birth of the child she was seized with a violent shivering, followed with severe pains in the *abdomen* and loins, and within a few hours from the attack of the disorder, became nearly as big as she had been before delivery. On the 3d I gave her four grains of the antimonial powder before mentioned, and finding no sensible effect, I repeated it in the same quantity after two hours. She puked twice, and had seventeen stools, like yeast in appearance, within six hours after the repetition of the powder. When the operation of the medicine ceased, the *abdomen* was almost wholly subsided, and the tenderness and fever much abated. As she was much fatigued, I gave her a cordial draught, with a few drops of *laudanum*. She had some quiet sleep in the night, and sweated profusely. There did not appear any necessity of repeating the powder, and she recovered perfectly, without taking any other medicine except some saline draughts, and afterward the decoction of *bark* twice every day.

The

The event of this case, and of some others which occurred to me about the same time, were very flattering. I presumed that I had at length discovered a method of treating this fever, and a medicine which would seldom fail to answer the most sanguine expectations. But further experience has convinced me, that without previous or even repeated bleeding in some cases, when the inflammatory symptoms are violent, this medicine will often fail to subdue the fever, and that it sometimes is uncertain in its operation. It is perhaps to be reckoned among the signs of an unfavourable termination of the disease, when the medicine in proper quantities produces no sensible effects. I am however persuaded that if we have an opportunity of giving it soon after the accession of the disease, it will often do the most essential service, and that too much cannot well be said in favour of this method. And it were above all things to be wished that physicians had the *early* care of patients in this disease, for the dissections of those who have died, have proved that very terrible mischief is produced in various parts with amazing celerity. In a very great number of patients whom I have had an opportunity of examining

of examining, all or some of the following appearances were observed. The *uterus*, or its appendages, were in a state of inflammation, or sometimes one or both of the *ovaria* of a livid colour and altered in their texture, as if mortified. The general substance of the *uterus* was loose and spongy, and it was less contracted than it ought to have been since the time of delivery. The *os uteri*, and that part of the *uterus* to which the *placenta* adhered, were discoloured and had a sloughy appearance. Small abscesses were sometimes found in the substance of the *uterus*, or in the cellular membrane which connects it to the neighbouring parts. The bladder was inflamed. The *omentum* was very thin, irregularly spread, and in a state of inflammation. The intestines were inflamed chiefly in the peritoneal coat, adhering to each other, and much inflated. Inflammatory exudation, and serum extravasated in the cavity of the *abdomen*, have been found in various quantities; but these were in a less degree, when the patient had laboured under a long continued purging. In the cavity of the *abdomen* were likewise found large flakes of coagulable lymph, which have been often mistaken for curdled milk, or for dissolved portions of the

omentum. It must indeed be acknowledged that the information acquired in this search, has not afforded any practical advantage, equal to the care or assiduity with which it has been made. What we have been able to learn has chiefly proved, that various parts are affected in different subjects; that when the disease has continued with violence for a few days, its effects will generally be beyond the reach of medicine, and that if the patient should fortunately recover, her recovery will depend upon circumstances which the physician cannot without great uncertainty and difficulty command*.

In the less violent degrees of this disease and more delicate constitutions, it will be necessary to pursue the same intentions, though with less activity. In such cases, after local bleeding with leeches or otherwise, as may be most convenient, and giving a proper dose of Ipecacuanha, or washing the stomach with an infusion of chamomile flowers, more

* We have been told that in the dissections of some who are said to have died of this disease, no appearances of inflammation have been discovered, but I should suspect that in such cases mistakes had been committed as to the nature of the disease and probably in its treatment.

lenient medicines must be prescribed. But they must be such as will produce a certain and speedy effect, for after the operation of an emetic, if stools are not procured, we shall neglect the means and lose the opportunity of doing most effectual service; for without them the relief obtained will not be permanent. An emollient clyster may be first injected to remove any hardened *fæces* from the lower part of the *rectum*, and then the antimonial powder in small doses, or the saline draughts with a due proportion of the *Natron* or the *Kali Tartarifatum*, or with Rhubarb; or the following draught may be given every third or fourth hour.

℞ *Natron Tartarifat.*

Mannæ opt. a ʒ ii.

Infus. Sennæ, Aq. Ment. Sat. a ʒ i.

Tinct. Cardainom. gut. xxx. M.

Or two ounces of *Magnesia Vitriolata* may be dissolved in a pint of thin gruel, and one or two large spoonfuls given every hour till due evacuations are obtained; and this medicine has been found to answer the intention when apparently more pleasant medicines could not be retained.

In every case of disease which requires speedy and repeated evacuations for its relief, particularly if attended with violent pain, it is necessary to give a respite to the constitution, by which it may be enabled to exert its own powers, or recover from the fatigue of the operations themselves. For this purpose opiates are wisely prescribed when the operations are concluded. But opiates being given for the purpose of easing pain, or of quieting some agitation, if they are not given in a sufficient quantity to produce the intended effects, are useless; for it is by their effects we are to judge of the propriety or advantage of their use. In some cases also which were accompanied with violent pain at the commencement, it has been found necessary to give a large dose of *Tinctura Opii*, immediately after the first bleeding, without waiting for any other evacuations by which the progress of the disease will be retarded. Nor is there ever occasion to hesitate upon the use or repetition of an opiate at any period of this disease, when the violence of the pain requires it; for though the pain may originally be a consequence of the disease, it becomes after a cer-

tain

tain time a powerful cause of its continuance and increase.

In the inferior degrees of this disease, after bleeding once, if thought necessary, and the exhibition of an emetic, which can seldom be dispensed with, we shall find the simple method of exhibiting an opening draught for the purpose of procuring four or five stools every day, and an opiate every evening, produce the most happy effects. But it is not possible for me to express my sentiments of the advantage which may be sometimes procured by daily purging, so clearly as by the relation of the following case which was lately under my care.

The wife of an eminent tradesman was brought to bed of a living child after a very tedious and difficult labour. She was of a corpulent but relaxed habit, and this was her first child. About four hours after her delivery she was seized with a purging, and the stools, which were of a dark colour and exceedingly offensive, soon afterwards came away involuntarily. I saw her early the following morning, November 22d. She had constant but not exquisite pain in the *abdomen*, which was tumefied, her skin was hot, her pulse quick, and she was thirsty.

Having voided no urine, I introduced the catheter, applied a flannel well sprinkled with brandy to the lower part of the *abdomen*, and ordered an opening draught of the kind before mentioned. She had proper evacuations by stools all day, and in the evening took an opiate. On the 23d I found that the purging continued, and there was little alteration in the other symptoms. The opening draught was repeated in the morning, and the opiate at bed-time. On the 24th I was informed she had got some refreshing sleep in the night. The pain in the bowels and feverish symptoms were abated, but the stools, which were yet very fetid, came away involuntarily. Both the draughts were repeated as on the preceding day. On the 25th, though the stools continued to come away without her consent, the *abdomen* was subsided and the tenderness almost gone. On the 27th the purging ceased, and she recovered without the repetition of the medicines. I was under the necessity of drawing off her urine twice every day till the eleventh after her delivery, when she was able to void it without any assistance. But it is not to a single case that I should have occasion to appeal in a matter of so much consequence.

quence. A long and successful practice hath convinced me that the purging which often attends this disease, is not only salutary, but frequently critical, and instead of being suppressed, that it ought to a certain degree to be encouraged. Nor would it be difficult for me to recollect many cases in which fatal consequences have speedily followed imprudent attempts to stop the evacuations*.

As this disease passes into its more advanced stages it becomes more complicated and dangerous, and there is a necessity of being very

* These remarks on the necessity of procuring stools, are to be considered as applicable only before the patient is reduced to a state of great debility, or perhaps to fevers occasioned by local inflammation of some of the contents of the *abdomen*. Experience has proved that in the advanced state of fevers of the *typhus* class, costiveness is a most favourable symptom. *Sydenham* takes particular notice of this in his most excellent treatise on the fever of 1661; and in a principal hospital of this city, it is an established rule, never to promote stools, or any weakening evacuation in fevers of this class, after the fourth day. But in the advanced state of those fevers, costiveness, *for a great number of days*, not only prevents an increase of the debility, but is the most promising symptom of a happy termination of the disease. It deserves to be particularly noticed, whether patients, in the advanced state of those fevers, ever die while the bowels are constipated.

circumspect in our endeavours to give relief. Bleeding, unless by scarification, or the application of leeches to the *abdomen* or hemorrhoidal vessels, will very seldom be proper at this time, and if directed or repeated by the encouragement which the inflammatory appearance of the blood may afford, will generally hasten the fate of the patient, by reducing the strength in a much greater degree, than it can abate the disease, as I have seen in many instances of this and other kinds of fever. It must therefore be omitted, or prescribed with the greatest caution. But if the stomach or bowels are much disturbed, and an emetic was not given in the beginning, one may be given at almost any period of the disease with safety and advantage. Or if there be no looseness, and stools have been procured sparingly through the course of the disease, the general method of cure must be pursued, allowing for the reduced strength of the patient. The frequent injection of gently purgative or emollient clysters, will be extremely proper, and laxative medicines of the kind before mentioned, not omitting to give opiates to procure temporary ease, nor to neglect the use
of

of such diet as will support the strength of the patient.

But when the stools are very frequent or involuntary, and all appearances threaten imminent danger, we must be cautious that our attempts to cure the disease are consistent with the state of the patient, though something must be hazarded for her relief. Clysters of chicken water, or flour and water boiled to a proper consistence, or of a decoction of linseed, often repeated, then constitute a very important part of the cure, by washing off some part of the offending matter which stimulates the bowels to frequent evacuations, and by acting as a fomentation. But if great care be not taken in their administration, the patient will suffer intolerable pain on account of the tenderness of the *uterus*, which I suppose to be the part principally affected, at least in which the disease most commonly originates, and of the influence of which this part never fails to partake.

At this time it will also be useful to give very small doses of Ipecacuanha mixed with the opiate as a diaphoretic, or the *Pulv. Ipecacuanhæ compositus*, either in some cooling vehicle, as the saline draughts, or with cordials, as
the

the situation of the patient may require. But if the stomach or bowels should be much disturbed in the advanced stage, or if any new cause of disturbance should occur, the Ipecacuanha may even then be given sometimes in such a quantity that it may act as an emetic. The white decoction with a large proportion of Gum Arabic, or the common emulsion with Spiritus Ætheris Nitrosi, make at this time a proper and agreeable drink. If the strength of the patient should sink, and great faintness come on, a necessary quantity of some cordial must be given in the interval between the draughts. I have also often in this stage given Camphor in substance, in Julep, or in the form of Emulsion, but have generally been obliged to discontinue its use, because it soon became disgusting to the palate, and offensive to the stomach; nor have I ever found that advantage from the use of Camphor which some have taught us to expect in this disease, though in many instances the Camphor Julep has appeared to be an agreeable cordial and to moderate pain.

Under the most deplorable circumstances, we ought never to desist from using our endeavours with assiduity, to relieve and extricate

cate the sick from the imminent danger they are in, both from principles of humanity and prudence; for they will sometimes recover very unexpectedly, when every prognostic is against them. Something always remains to be done which may be of use or contribute to their comfort; either with the view of obviating troublesome or painful symptoms; or of supporting, by means adapted to their state, their strength; or of promoting some obstructed secretion, especially by regulating the state of the bowels. On such occasions I have among other things been induced to try clysters of various kinds, emollient, anodyne, and antiputrescent, particularly of strong decoctions of *Peruvian bark*; but the event obliges me to acknowledge, that I have not observed much advantage from them, beyond what may be derived from the domestic ones which are in common use.

Nor has the *bark*, though given in different stages of the disease, with remissions tolerably distinct, answered the intention as a febrifuge; though in a few cases, in which the intermissions were complete, it has succeeded. As a supporter of the general strength of the constitution, the *bark* has been likewise found of
less

less service than might have been expected, because of the disturbed and very irritable state of the bowels, which it tends to increase. Instead of this medicine, the Columba root, in powder or infusion, has been given every fourth or sixth hour; or the common bitter infusion prepared with cold water, and joined with some aromatic; or a strong infusion of chamomile flowers, with the addition of a few cloves; and sometimes the following medicine, especially when the hiccup has been troublesome.

℞ Spir. *Ætheris Vitriolici* 3 ij.

Aqu. Puræ, vel Menth. sativ. 3 viij.

Sacchar. pur. q. s. fiat Mistura cujus sumat ægra
uncias duas, tertia vel quarta quaque hora.

In other cases *Æther* or *Hoffman's* mineral anodyne liquor have been given, but they have often proved less agreeable to the stomach, and I believe not more efficacious than the *Spiritus Ætheris Nitrosi*, which I have substituted for them, and given with great freedom and advantage. It was before observed, that the hiccup was frequently an indication of a collection of offensive humours in the stomach, and has generally preceded the spontaneous vomiting, which in the worst
state

state has sometimes proved critical; though the same symptom is also not seldom a proof of the progress of the disease, and a sign of the utmost danger.

In the course of the disease, when the *abdomen* has been much distended, notwithstanding the evacuations, I have recommended the application of the *Cataplasma Cumini* moistened with brandy; and sometimes directed clysters composed of *Electarium e Baccis Lauri*, or a solution of *asa fætida* in simple peppermint water, and wish I was justified in speaking more highly in their praise; but they are among the things which have occurred to me when I have scarcely known what to propose.

I have rarely attempted to inject medicines of any kind into the *vagina* or *uterus*, though from a consideration of the probable state of the parts, and of the fetid humours discharged, it is reasonable to think that emollient or gently detergent injections might sometimes be useful. But the helpless state of the patient is such as to render the operation itself very troublesome; and if they are advised, great caution will be necessary both in their composition and administration; but
fomentations

fomentations to the external parts have, I think, sometimes afforded comfort, and been of service.

These are all the observations I have made, and the opinions I have entertained on the puerperal fever in its simple state, that is, considering it as a disease, originally, of the truly inflammatory kind, affecting one or more of the parts contained in the *abdomen*, extending its influence over the whole constitution, and speedily assuming a putrid form with more or less virulence, according to its degree and treatment during the inflammatory state. But when putrid diseases are epidemic*, the puerperal fever may, at the commencement, partake of the reigning disease, (varying only in the affection of the parts concerned in

* The first account I have met with of a puerperal epidemic is in *Peu*. It appeared in the year 1664, in the *Hotel-Dieu*, at *Paris*. In this account there are some very curious observations. In this country we have very reprehensibly neglected to preserve any register of the times when such fevers have prevailed. But in the year 1788, an account of a puerperal epidemic, was published by my ingenious friend Dr. John Clarke, according to its appearance in one of the hospitals in this city, and, in some instances, in private practice.

parturition)

parturition) as the histories of the Plague, in this and other countries, have sufficiently proved. This disease may also be combined with a phrensy or peripneumony, with symptoms multiplied and varying according to the combinations. Then our principal attention must of course be paid to the most urgent disease or symptom; but the event of such cases must be more dangerous, on account of the number and importance of the parts concerned.

Here I must conclude, deferring to some more convenient opportunity, the few remaining observations I have made on this subject, and on the diseases of children.

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